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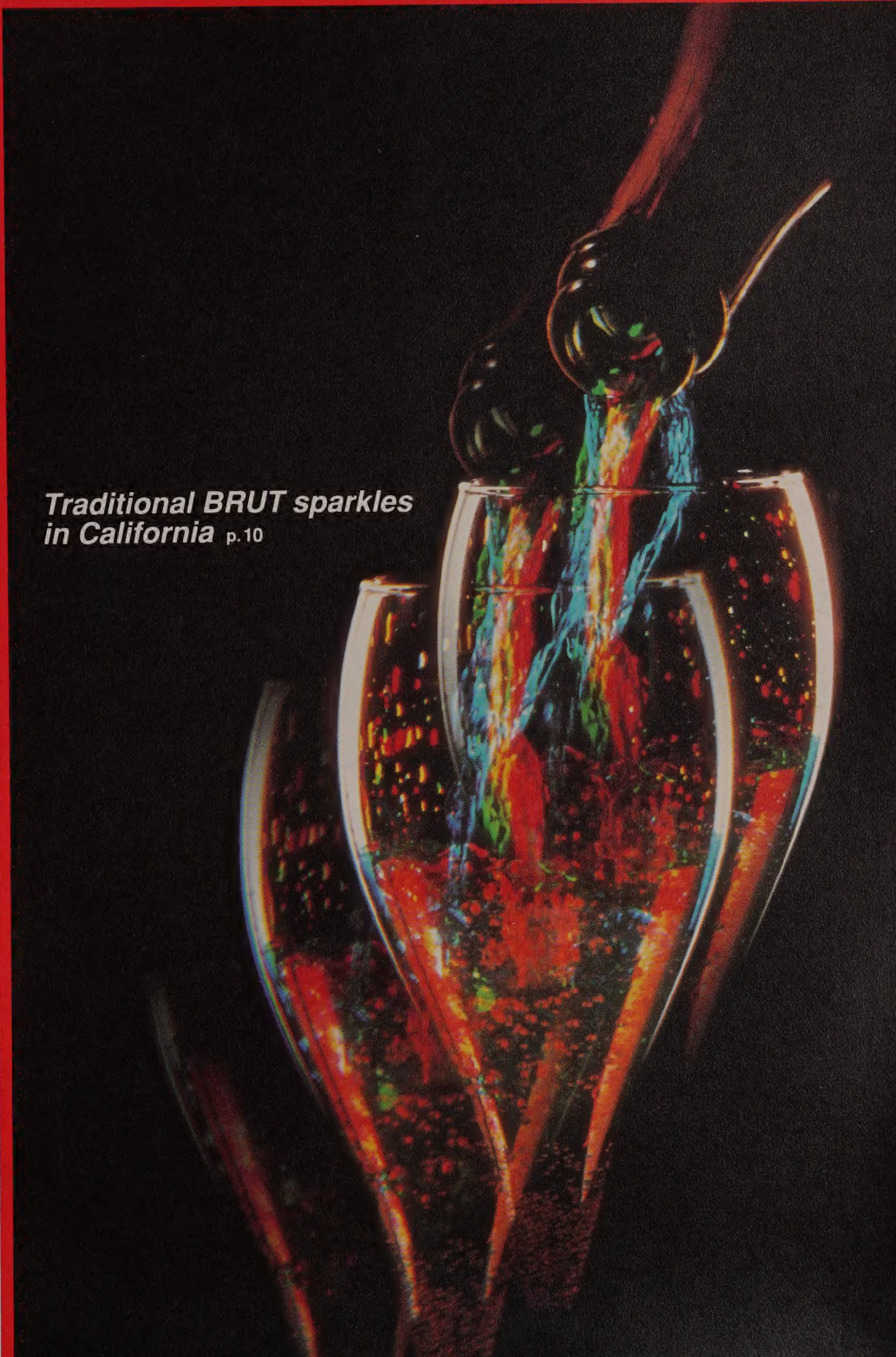

Traditional BRUT sparkles in California p.10

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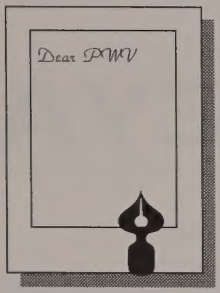

✍ **Dear *PWV*:**

The California port story in the Jan/Feb'92-*PWV* was terrific!

Thank you for publishing it. These are wonderful wines made by wonderful people, and I am glad that you are doing your share to educate your readers about them.

Thanks also for organizing the tasting. The fellowship was great, and the Healds are always a joy!

Keep up the good work!

Sincerely,
Leon Sobon, owner/winemaker
Shenandoah Vineyards,
Plymouth, CA

✍ **Dear *PWV*:**

Thanks for the timely article by Janet Fletcher, "What makes a winery newsletter work?" in the March/April'92 issue of ***PWV***.

I'm organizing (and agonizing over!) a consumer newsletter to wine enthusiasts in Indiana. Ms. Fletcher's article provided quite useful information for me to ponder as I plan my approach. I think some wineries underestimate the value of the present customer, for whom a newsletter can inspire brand loyalty.

Now I understand why 'practical' is the first word in your magazine's name!

Thanks again,
Theresa M. Browning,
Marketing Specialist
Indiana Wine Grape Council

✍ **Dear *PWV*:**

"Coronary heart disease is 40% lower in France than in the U.S. despite a French diet high in fat and cholesterol. It just makes good sense to find out what they are doing that we are not," says Dr. Roy Williams, organic chemist and researcher at Old Dominion University.

"Specifically, the compounds in red wine of interest to us are polyphenols found in the seeds, skins and stems of red wine grapes," explains Williams.

"If you are a middle-aged American man, your chances of dying of a heart attack are three times greater than a Frenchman of the same age," notes Dr. Williams. "This could be attributable to the fact that the French drink red wine in moderation, two to three glasses per day with their meals."

I believe it would not be premature for a balanced governmental approach to consider the preventative benefits of moderate wine consumption. We could save some 433,500 lives per year of the over six million individuals suffering from some heart ailment.

While the health benefits of wine have been known for centuries, it is not until recently that their health-giving properties have been studied. The French are so convinced of the effects of some of the compounds in red wines, they have begun marketing over-the-counter drugs and some cosmetics which contain selected polyphenols.

We should heed the words of Louis Pasteur, 19th century wine scientist who gave us microbiology and immunology. "Wine is the most healthy and most hygienic of all beverages."

Jacques Recht, winemaker
Ingleside Plantation Vineyards
Oak Grove, VA 22443

✍ **Dear *PWV*:**

Patrick Campbell's article on the futility of the 100-PS in the March/April'92-***PWV*** was very eloquent. I look forward to Part II. I suggest we use a 100-PS to rank the writers who insist on using it.

Chris Phelps, (Dominus)
St. Helena, CA

✍ **Dear Jake:**

It seems funny to be writing to you when I just saw you the other day. Remember we greeted each other with a 'high five'? I just wanted to let other people know what a great friend you are to me.

Lately you have brought all sorts of boxes to my house. Mum says they are for me, but not just yet! You tell me they have bottles of wine inside and talk about how my Daddy made wine and wanted to start a cellar for me. I don't know what a cellar is, but I bet when I'm older you'll tell me.

Mum said thanks to you, Jake, that people in the wine industry are making it possible for me to have something for 'my cellar.' Thank you.

From your buddy,
Kieran Toovey

Editor's note: See Jake Lorenzo's column on page 10, March/April'92-***PWV*** for more information on Kieran Toovey.

Winemaker's Blues

By Bonnie Abrams
Widmer Wine Cellars, Naples, NY

I'm a winemaker — baby
Folks think that's really cool
When they meet me, they ask me
If I been to winemaking school?

Well yeah — I been to school
It's the school of hard knocks
I been banged up and battered
By barrels on the loading docks

They weigh a quarter ton
When I fill'em up
Drinking all of that wine sounds like fun
But believe me it's really rough

❧ CHORUS:
And those nightmares that won't let me sleep
Wondering how all my wine's gonna keep
If they outlaw sulfites
Oh those sleepless nights
Prohibitionist maniacs and their excise tax

Crawling through a dark cellar at night
Looking for double males in the right
size fills me with fright
Those are fittings — I need to possess
To pump-transfer my fine wine around
without making a mess

❧ CHORUS
My fermentations — baby
They get so hot
I need special equipment to cool down
Or I'm really on the spot

❧ CHORUS
Oh baby — these are a winemaker's blues

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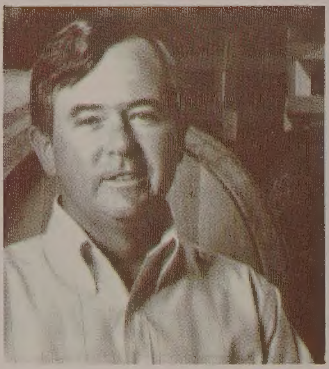

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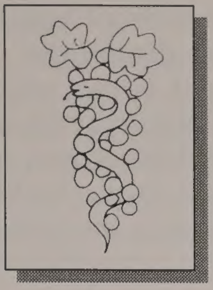


By Wells Shoemaker, MD

WARNING: Drug and alcohol conspiracy

Strictly worded government warnings advise wine consumers that alcohol may impair their abilities to drive a car or operate machinery. Pharmacists also apply warning labels to considerably smaller bottles.

The pharmaceutical warnings refer to the potential additive-sedating effects of alcohol with medications such as sleeping pills and tranquilizers. The antihistamines found in hundreds of over-the-counter cold and allergy preparations also make some people sleepy and, compounded with alcohol, indeed can affect driving safety.

We now have a variation on the theme: some drugs actually can raise the blood-alcohol level. You may have some in your medicine cabinet. ***WARNING: Ignorance of these effects could get you arrested.***

During the last 15 years, medical research has made great strides in the understanding of how alcohol works in the human body, including elucidation of some of the mechanisms for both damaging and healthful effects.

Getting alcohol into the body is a fairly simple task, but tremendous effort has been applied to discover how we get it out. Gastric Alcohol Dehydrogenase (GADH), an enzyme found within stomach lining cells, has emerged as a major determinant of the metabolic variations between men and women, alcoholics and moderate consumers, and possibly DUI (Driving Under Influence) arrestees and their innocent dinner partners.

Some of the alcohol we swallow is absorbed directly into the stomach wall, rather that sluicing into the small intestine. GADH breaks down (oxidizes) some of the alcohol as it passes through the cells, preventing alcohol from reaching the bloodstream.

Some alcohol escapes the GADH and enters the bloodstream, where it will be joined later by alcohol absorbed from the small intestine. Alcohol in the bloodstream will then be methodically oxidized in the cells of the liver by another enzyme with the same name (*hepatic* alcohol dehydrogenase).

Most of our expectations for personal tolerance of alcohol — or moderation — are based upon confidence in our livers. But the performance of our stomach lining may be just as important.

The stomach, of course, does a few other important things for hunter-gatherers. It receives food in episodic large loads and gradually releases it to the small intestine. The stomach also initiates the digestion process by producing acid and digestive enzymes and delicately blending them with the food.

Alcohol and ulcers

For a large number of people, the stomach's acid production goes beyond the limits of helpful. Excessive acid can cause irritation (gastritis) or even erosion of the stomach lining (an ulcer). Ulcers are so common that ranitidine (Zantac®), a drug which effectively reduces acid secretion, is the third most commonly prescribed drug in the U.S.

Ranitidine and its cousin cimetidine (Tagamet®) have been known to inhibit GADH function in the test tube, but a recent ***Journal of the American Medical Association (JAMA)*** article (Jan. 1, 1992) showed that these effects could land you in the hospital or in jail.

Authors Carlo diPadova and associates found that ranitidine so substantially reduced GADH function, that experimental subjects reached blood-alcohol levels in the legally intoxicated range after drinking only 1.5 'drinks' of ethanol. That is the amount contained in about six ounces of wine.

Clearly, the study did not reproduce the custom of drinking wine with meals. The subjects were given grain alcohol diluted with juice or sugar water.

Accepting the study as a first step, however, moderate wine drinkers should still heed a warning. Food in the stomach will delay the passage of alcohol from the stomach to the small intestine. Consequently, the activity of enzymes in the stomach wall may be even **more** important to civilized diners than to the experiment's hungry volunteers, whose alcohol passed fairly quickly to the small intestine.

Ranitidine and cimetidine are known as "H2 receptor antagonists." Famotidine, another ulcer drug in that class, did **not** affect GADH activity. Common antacids (chalky alkaline materials such as Maalox®, Gelusil®, Tums®, and many others) likewise do **not** affect GADH and `first pass' alcohol metabolism.

Most people with ulcers have been warned by their doctors not to consume alcohol in any form, since alcohol stimulates acid secretion. So isn't the interaction of alcohol and an ulcer drug a moot point? Ironically, the threat is real because ranitidine works so effectively to relieve ulcer pain. After months of symptom-free life on ranitidine, many medically-mandated abstainers may return to occasional alcohol use.

Aspirin

Doctors also advise ulcer patients to avoid aspirin, but millions of people use aspirin for arthritis and ordinary aches and pains. Many adults use low-dose aspirin as a preventive against heart attacks, and some use aspirin either to treat or prevent the headache of hangovers.

Aspirin also has an effect on GADH in the test tube, although less dramatic than ranitidine. A small study in ***JAMA*** (Nov. 14, 1990), gave volunteers both a meal and a 1-gram dose of aspirin (about three tablets) and followed these with a dose of ethanol one hour later.

The aspirin-treated subjects had about 25% higher blood-alcohol levels than control subjects. While less striking than the ranitidine effect, the effects still could bridge the gap from legal to illegal blood alcohol content for drivers.

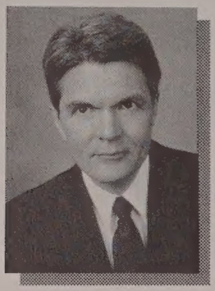
The message

Different people handle alcohol and medications variably, and no printed generalization will predict exactly what will happen to an individual. Some of the hasty newspaper accounts of these effects are too sensationalized to guide a personal health decision.

People who choose to consume wine in moderation, and certainly those for whom wine is part of their profession, should consult a physician about the interaction of alcohol and any drugs they are using.

Many physicians will not have a current grasp of the newest research in this area, but they can obtain it through consultations with a clinical pharmacologist or the medical library. ■

Dr. Shoemaker is a pediatrician and the winemaker at Salamandre Cellars in Aptos, CA. He generally avoids hangovers and so far has avoided ulcers, despite contemporary small-winery economics.



By R. Corbin Houchins

Examining new civil rights

On July 26, 1990, the federal Americans with Disabilities Act was signed into law and became effective on January 26, 1992. The Act and its accompanying regulations are complex, new, and subject to varying interpretation. The following remarks are very compressed, and there are qualifications or exceptions to practically everything said here about the effect of the Act. Consult your legal adviser before forming any judgment about the impact of the Act on your winery.

Objectives

According to the Act, discrimination against a qualified person because of his or her disability is illegal, in regard to job application procedure, hiring, promotion, firing, pay, training, or other conditions of employment. The Act is also meant to improve access to public facilities (including some wineries) by members of the public with disabilities. Notices informing individuals of their rights under the Act must be posted by covered employers, labor contractors, unions, and labor-management committees.

Who is covered

Employment provisions of the Act cover firms in industries 'affecting' interstate commerce, which is pretty nearly everybody, that have at least 25 employees throughout a 20-week period in the current or preceding year, **and** 'any agent' of such an employer. Thus, those planning to become the agent, for any purpose, of a middle- or large-size firm should be aware of the requirements of the Act. After July 25, 1994, the threshold number of employees drops from 25 to 15.

Relevant disabilities include both physical and mental impairment. The Act does not require employers to ignore disabilities that would pose a direct threat to the health or safety of other persons in the workplace. It does not prohibit a no-drinking rule at the workplace, applicable to all employees, but does prohibit discrimination against alcoholics if they do not threaten the safety of others.

Transvestites are specifically excluded from protection if they have no other 'disability.' Current users of illegal drugs are not protected, but ex-users who have quit recently and now participate in a supervised rehabilitation program are.

Infectious diseases are disabilities covered under the Act. Unless an employer can show that in reasonable medical judgment an infection creates a threat to the health or safety of others, discrimination is illegal. Therefore, the Act should prevent discrimination against HIV-positive employees and applicants by food handlers such as wineries.

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What is required

The duty to make accommodations to employees was a subject of compromise in the legislation. In the final version, employers are required to accommodate disabilities only to a reasonable extent. If the accommodation would require significant difficulty or expense in light of the employer's financial resources and type of operation, it is not mandatory under the Act.

'Reasonable accommodation' is defined more precisely by regulations, which also elaborate on 'undue hardship' as excusing noncompliance. Regulations also provide more detail than the Act itself about making existing facilities accessible, restructuring jobs, acquiring or modifying equipment, training, and provision of additional staff to translate or read for employees with disabilities.

A principal purpose of the Act is to make public accommodations equally available to persons with and without disabilities. Public accommodations include businesses 'serving food or drink.' Prohibition of discrimination in the 'full and equal enjoyment' of the facilities embraces outright denial, unequal access, and segregation from persons without disabilities. Compliance may require removal of architectural and other barriers and changes in methods of operation that fundamentally do not change the nature of the services or goods provided.

The Act also imposes new obligations on public and some private entities with respect to access by persons with disabilities to public transportation and to regulated telecommunications. Those requirements create rights for employees and applicants with disabilities which may make it easier for them to get to your place of business or, in the case of hearing-impaired, to perform jobs that require use of the telephone.

Further information is available from various sources, including attorneys and other consultants, your insurance carrier, and the Equal Employment Opportunity Commission. ■

COMING IN
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by **John MacConaghy**, attorney at law

and **"The Winery Perspective"**
by **Corbin Houchins** attorney at law

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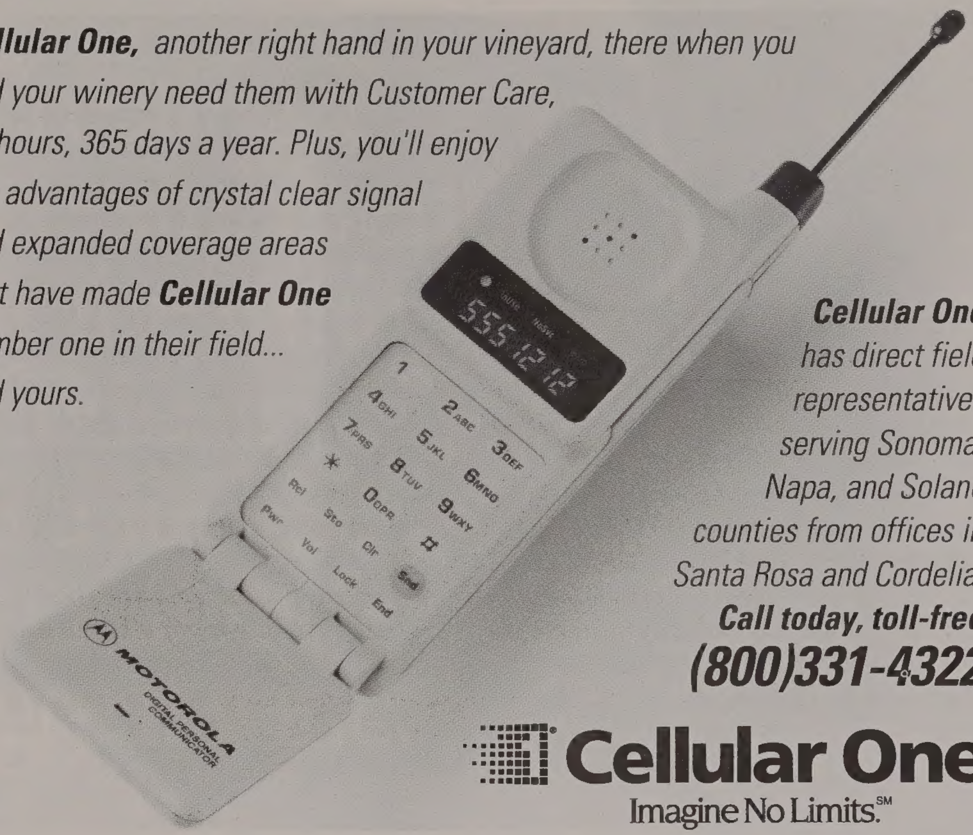

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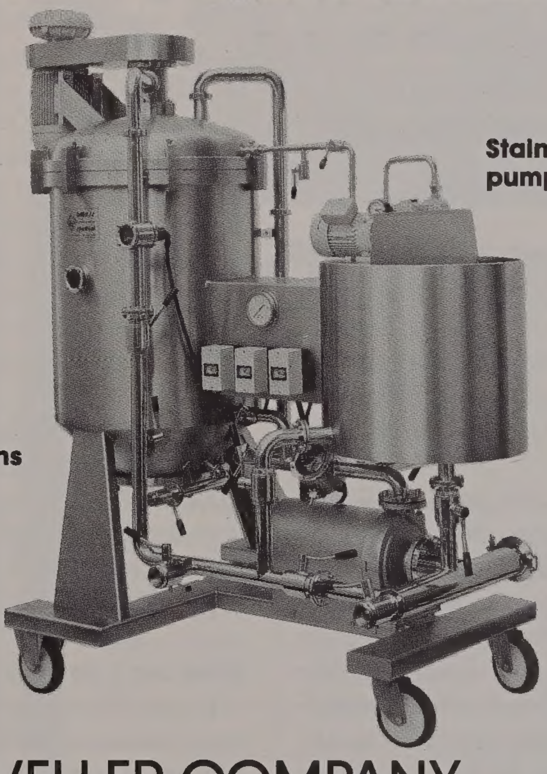
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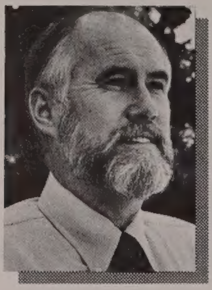


By D.R. Storm, Ph.D, P.E.

CO_2 greenhouse gas not all bad

A new generation is growing up thinking that carbon dioxide is an evil gas that will deprive them, and future inhabitants, of the Earth as a decent place to live.

In a previous **PWV** *column, I reported on an International Conference on World-Scale Ocean Models and theories on global warming (see "Winery Water & Waste,"* **PWV** *May/June 1990). The theorists reached no unanimous consensus that the Earth's temperature is increasing steadily, but no one seems to challenge the fact that the concentration of CO_2 in the atmosphere is increasing.*

My grandchildren, in grades three to six, are being told that carbon dioxide is slowly killing the Earth. So, what is the other CO_2 personality?

The lively bubbles in sparkling wine and beer, spritz in soft drinks, suppression of fires with hand-held and automatic CO_2 systems, freezing and chilling of perishable food, and manufacture of stainless steel are but a few of the very important and beneficial uses of the versatile gas.

CO_2 was, at one time, used successfully as a working substance (refrigerant) and may get renewed attention as ozone-depleting chlorofluorocarbons (CFCs) are phased out.

CO_2 may have its evil side, and its effect on global temperatures bears watching. But it does not seem sensible to ban all future uses entirely, in a 'Chicken-Little' frenzy of misplaced eco-enthusiasm, which many of our lawmaking bodies seem to favor.

Analyzing your electric power bill; tightening the overhead cost belt

(Part II):

More on rate schedules

Part I of this series scrutinized the three major components of the electrical bill:

- customer charges
- demand charges
- energy charges

The model for this analysis, (referenced in Part I), is Northern California's principal electric utility, Pacific Gas & Electric (PG&E) Company, and their rate schedule E-20, which fits many wineries (equal to or greater than maximum demands of 1,000 kilowatts).

One additional electric power bill 'adjustment' that requires explanation is called **power factor adjustment**. Item (6) of schedule E-20 defines the power factor adjustment as "... The ratio of lagging reactive kilovolt-ampere-hours to the kilowatt-hours consumed in the month."

The rate schedule also specifies an average monthly power factor of 0.85 or 85%, as the nominal acceptable value for which no adjustment is required. The latter schedule further provides that if the average monthly power factor falls below the baseline 85%, a penalty of 0.06% for each percent below the magic '85' will be assessed against the total monthly bill.

If, however, your power factor (P.F.) is greater than 85%, 0.06% of each percent in excess of 85 will be levied against the total bill as a reduction in total charges.

So how does PG&E keep track of your P.F.? As part of the basic revenue meter, or as a second, separate meter in some installations, the so-called reactive kilovolt-amperes (RKva) are measured and recorded. Thus, the ratio of lagging RKva to kilowatts (kw) recorded by the revenue meter can be calculated and the P.F. bonus or penalty determined. A quick analysis of your monthly power bills will reveal the magnitude of your winery's power factor 'earning' or 'spending' capability.

If your winery is operating under another rate schedule that is less than a 1,000kw load per month, P.F. correction is probably not significant for your facility. RKva meters generally are not installed for monthly loads less than 300kw.

What can I do with an undesirable P.F.?

If you determine that the power factor correction is a problem for your winery, contact a competent electrical engineer who is familiar with energy audits and energy conservation retrofits. The engineer can confirm whether you do, in fact, have a correctable problem that is economically significant enough to warrant further study.

One simple possibility for P.F. correction is the addition of carefully matched capacitors to motors that are operating at P.F.s of less than 85%.[1]

All federal facilities with installed motors of 5 horsepower (HP) or greater currently are being retrofitted with P.F.-correcting capacitors.[2] Thus, you can assess quickly your own winery's chance of P.F. correction by knowing that you exceed the 300kw lower-load limit and have motors of 5HP or greater.[3]

Peak demand controls

Programmable solid state devices are available that have the ability to limit peak demand within the winery by dropping certain electrical loads on a priority basis.[4] Obviously, this approach to saving energy costs has its practical limitations.

For example, the winery cannot do without its crusher-stemmer or must-transfer pumps during harvest time. So, in deciding to use demand-control measures, you must balance the practicality of controlling electrical demand in the winery against potential energy savings and the cost of the demand control devices.

Irrigation pump testing

One other possibility exists for plugging leaks in the winery's energy revenue pipeline. PG&E (and other power service companies in grape-growing areas, I'm sure) can provide free pump-efficiency testing of existing well pumps with certain restrictions.[5]

The pump size must be equal to or greater than 5-HP and the user must agree to have the pump test data entered into the utility's master data file system. A telephone call to the local PG&E office (or your power utility) can provide details on the testing program. Most importantly, the test compares electrical input to hydraulic output and clearly indicates whether you are expending kilowatts that provide no return in pump performance.

David Storm is a Consulting Civil and Sanitary Engineer and owner of Winters Winery.

References

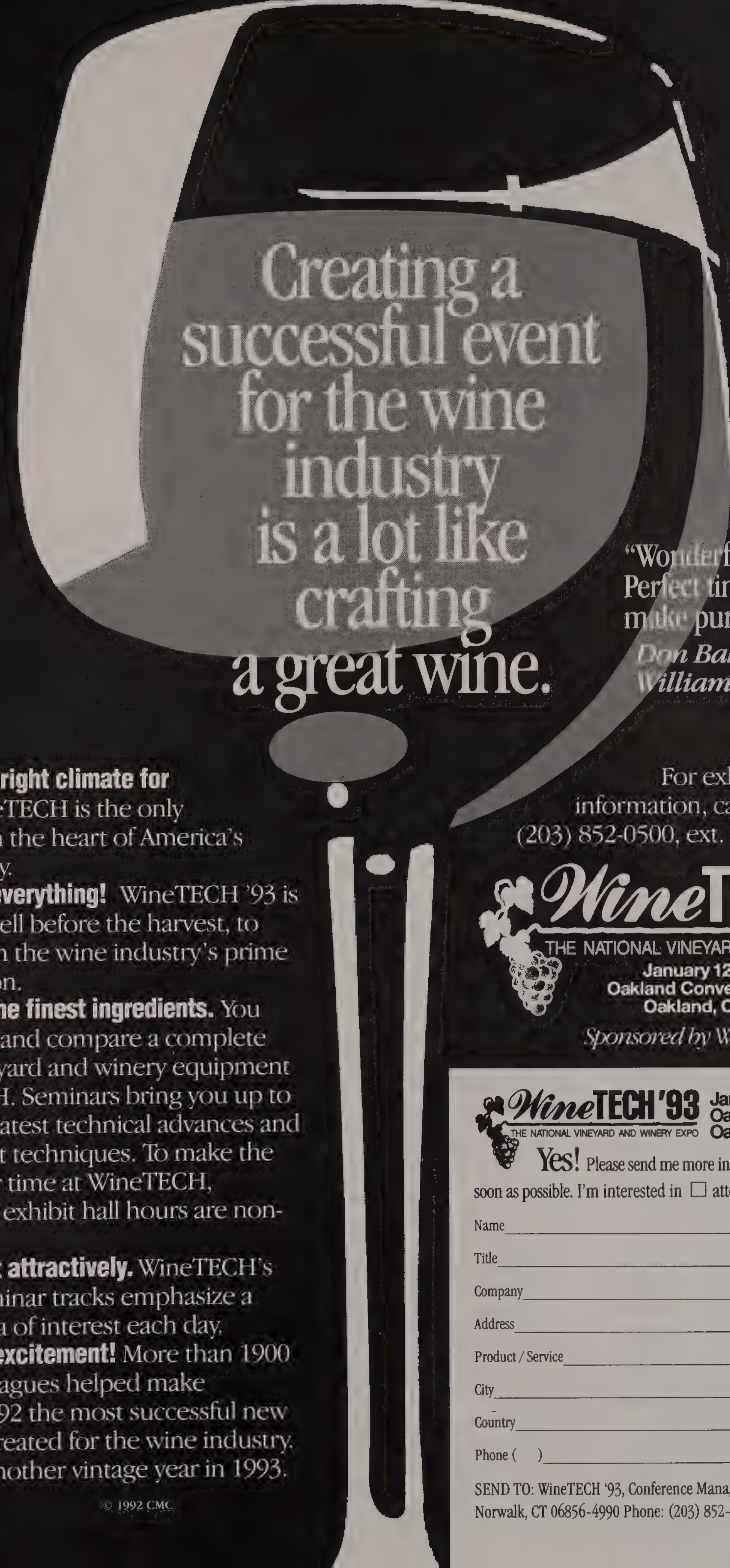
1. **Electrical Construction and Maintenance**, *1983, McGraw-Hill, Inc. N.Y., N.Y.*

2. *Personal communication, 1992. Charles Martin & Associates, Electrical Engineers, Sacramento,CA.*

3. *Ibid.*

4. **Electrical Design, Safety and Energy Conservation**, *Thumann, A. 1978. Fairmont Press, Atlanta, GA.*

5. *Personal communication, 1992. PG&E Vallejo Office, (Pete Novalski), re: Well Pump Testing Program.*



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Traditional BRUT *sparkles* in California

By Eleanor & Ray Heald

Méthode champenoise is the operative term in this report. It refers to time-honored, bottle-fermented sparkling wine production from the varietals traditionally used in making champagne—Chardonnay, Pinot Noir, Pinot Meunier, with the inclusion of Pinot Blanc. For Mumm Napa Valley, the varietals extend to Pinot Gris and for F. Korbel & Bros., Chenin Blanc, and French Colombard.

PWV recognizes the legality of the term California champagne and the world-class, quality product it signifies. However for purposes of clarity, throughout this text, the term 'champagne' exclusively refers to either the French region or the sparkling wine from the region.

'Sparkling wine' denotes the domestic méthode champenoise product from 15 producers interviewed. All wines discussed are the producer's vintage or nonvintage Brut 'house' style without a proprietary name, except where noted.

Origins of the method of tradition

Champagne's first wine-producing vineyards were planted between the third and fifth centuries AD. Fifth century French clergy and religious orders established the basic foundation of the wine industry.

In the centuries that followed, monks extended vine growing to fulfill their requirements for communion wine and for travellers to whom the monastic orders extended hospitality. Supplying the local lords and townspeople with wine secured income for abbey maintenance and support of charitable endeavors.

Around the tenth century, to expedite marketing and shipping using the main Marne River waterway, vineyards were most extensive in Champagne's Valley of the Marne.

More than once, the Hundred Years War halted viticultural expansion in the Champagne region. By the early 15th century, the luxury reputation of the wines of the area had spread both in France and abroad, but in fact, it was accessible only to the nobility.

By the mid-17th century, Champagne's vintners mastered wine stabilization and the techniques of producing white wine from both black and white grapes. In the last decades of the century, they learned that champagne could become sparkling under certain conditions.

Religious figures of the period, notably Dom Pierre Perignon, Bursar of the Benedictine Abbey of Hautvillers from 1668 to 1715 and Brother Jean Oudart, manager of the Pierry vineyards of the Benedictine Abbey of Saint-Pierre-aux-Monts at Chalons-sur-Marne from 1680 to 1742, played decisive roles in the deliberate production of champagne.

Today, many of their techniques for champagne production are incorporated into méthode champenoise: selecting premium grapes, blending the wines, and producing a clear wine with a persistent, sustained sparkle.

Around 1729, the first champagne houses were founded in Reims and Epernay, following a Royal enactment which authorized the shipment of sparkling champagne in bottles. At the start of this century, it was forbidden to transport wine in bottles. It was usually shipped in barrels, together with bottling instructions to let the wine 'work' to achieve a sparkling froth.

At the beginning of the 18th century, wooden plugs wrapped in tow were gradually replaced by corks. However, the upper part of the cork continued for some time to be wrapped with tow, secured by twine.

In the mid-18th century, specially strengthened glass bottles called flagons became available. However, breakage from gas pressure frequently destroyed ⅓ or more of the bottles stored in a champagne cellar.

The 19th century witnessed considerable technological development. Techniques for dosing and the prevention of breakage, the work of scientists such as Maumene and Pasteur researching yeasts and fermentation, were early accomplishments. In 1825, the first bottle fillers were installed. By 1827, the corking machine was developed. In 1844, the dosing and bottle rinsing machines were used and in 1846, the cork-tying machine was invented.

These developments were followed by the processes of riddling and disgorging that replaced the decanting method of clarifying champagne.

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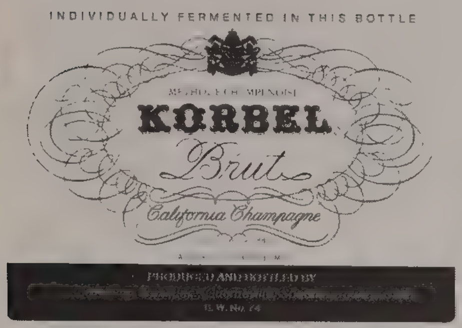
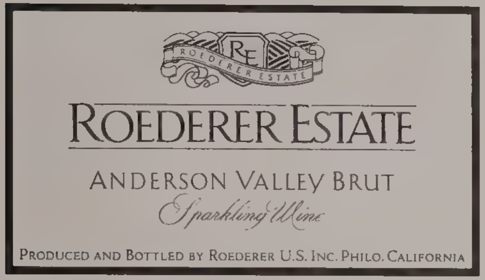
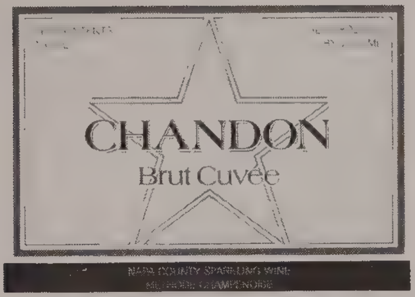
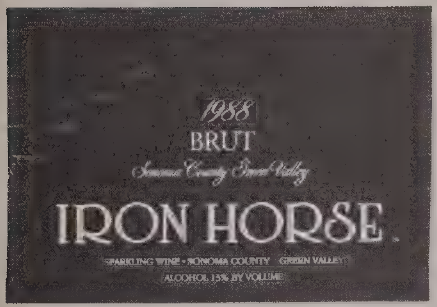
NAPA VALLEY
CHAMPAGNE
VINTAGE 1985
PRODUCED AND BOTTLED BY SCHRAMSBERG VINEYARDS · CALISTOGA CALIFORNIA
ALCOHOL 12% BY VOLUME CONTENTS 750 MLS





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In 1908, the Champagne region was given the status of a delimited area. Wines produced there were entitled to the appellation 'Champagne.'

The region survived the phylloxera crisis, two world wars, a global depression and prohibition in the U.S. Today, the region produces more than 200 million bottles annually. There's no possibility of vineyard expansion within the delimited area. More than 15 centuries stand behind champagne's traditions that have been sensitively passed to the west coast producers of méthode champenoise (MC).

Style

When interviewed, MC producers offered brief, straightforward responses about style such as Stan Anderson's "medium body, elegant, complex with light yeast and toast" which was echoed by Jon McPherson (Culbertson Winery) with the addition of "a nice backbone of age, fleshed out with youth and vitality."

Dawnine Dyer (Domaine Chandon) has the same stylistic goals, but adds "crisp finish." Bob Iantosca (Gloria Ferrer) puts emphasis on fruit with light yeast complexity. Dry, but not too dry, with a crisp (definitely not sweet) finish. For the Shadow Creek Cellars bottling (owned and produced at Domaine Chandon, but from different fruit sources) Dyer stresses a "flavorful, full-bodied, rich style."

"Sparkling wine with a light fruit profile in the forefront is what I call the California style," maintains Korbel's Bob Stashak.

"The intensity of the Carneros fruit allows us to make an elegant yet full-bodied wine with a lasting finish," contends Eileen Crane (Domaine Carneros), focusing on regional identity.

"Maison Deutz Winery is emphasizing the vineyard and the fruit characteristics offered by the cool Central Coast climate," reports winemaker Christian Roguenant. "We have styled the cuvee to exhibit a fine, consistent bead, and a combination of delicacy and complexity of flavors with rich, yeasty overtones."

"The essence contributed by selected house yeasts have allowed us to showcase the characteristics of Monterey County fruit," Tom Stutz (Mirassou) says.

Also capturing the 'essence,' but of the Napa Valley is Mumm's Greg Fowler. "Our emphasis is on fruit, freshness, cleaness, and drinkability," he states. "We strive for well-balanced, pronounced fruit that does not dominate the overall flavor profile."

Mirroring this focus, Iron Horse Vineyards' Raphael Brisbois maintains that "achieving a style that captures the essence of our vineyards is the primary emphasis. We want to showcase the fruit and marry it with a complex palate and long finish in a well-structured wine."

Since Jepson Vineyards produces a 100% Chardonnay oak-aged, barrel-fermented style, the emphasis is different. "We're striving for a rich, round mouthfeel backed by modest varietal fruit and a toasty, complex aroma," winemaker Kurt Lorenzi says.

At the other end of this spectrum is the style described by Chateau St. Jean's Pete Downs. "We're aiming for a light, fresh style with no one dominant flavor or aroma," he contends. "The wine should have the ability to age for three to five years, but is ready to drink 90 days after disgorging."

"Piper Sonoma Brut relies heavily on the fruit berry flavors and structure from Pinot Noir," winemaker Chris Markell emphasizes. "Chardonnay and Pinot Blanc are used to add floral and citrus characteristics, which add to the overall complexity. The wine has a medium body with fruit in the aroma and palate which is enhanced by subtle yeast characteristics. We are not producing a wine that is dominated either by yeast or fruit."

In the same vein, Michel Salgues of Roederer U.S. strives for low fruit levels. "However, we want the wine to be full and creamy in good balance with long-lasting flavors," he emphasizes.

"Scharffenberger is aiming to come as close to a traditional French-styled sparkling wine as we can attain with California fruit," Tex Sawyer says. "The wine should have a good balance of masculine and feminine characters without yeast or fruit character dominance. We blend for balance and finesse in all parts of the wine."

"An attractively, intense, ripe fruit character complexed by age and winemaking," is the goal at Schramsberg Vineyards according to winemaker Alan Tenscher. "Each bottling should be an integrated, delicious beverage."

Fruit contribution to style

While each winery responded in slightly different terms depending on fruit sources, there was general agreement on the following potential contributions to the cuvee from the specific varietals:

Chardonnay: lends green-apple aromas and crispness, incisive citrusy and floral highlights, pear-like elements, spicy aromas and flavors, tropical/nutty fruit, perfume, suppleness, balances the bolder Pinot Noir, structure, depth, backbone, firmness, length, elegance, and longevity.

Pinot Blanc: early fullness and quick development, viscosity, roundness, complexity, bright fruit character, floral notes, softness, lengthens palate, reduces overly fruit character of other traditional varietals, and drinkability.

Pinot Noir: contributes delicate fullness, body, opulent fruit characters, raspberry and cherry aromas and flavors, berry-like fruit, red-wine character, spice, elegance, broadens mid-palate, richness, subtle strawberry elements, light salmon color, main structural component, finish, and length.

Pinot Meunier: adds roundness and richness to Pinot Noir, floral, berry, spice, and structure.

House style and ageability

Winemaker members of the **PWV** MC tasting panel agreed on a four-step process leading to evolution of a 'house' style.

- consistent fruit origins
- time on tirage and time in the bottle
- regional fruit characteristics, varietal composition of the cuvee, and winemaking influences
- establish a philosophy and go for it with the fruit.

The winemakers agreed that Chardonnay does not extend ageability.

"Pinot Noir adds complexity and it is perceived as longer-lived," Fowler contends. "It's synergistic. The phenolic structure of Pinot Noir lends more to ageing potential than anything that can be said for Chardonnay.

"Chardonnay has oxidizable phenols," Brisbois adds.

Yeast preferences

Some producers use more than one yeast selection for primary fermentation. Leading the preference poll for primary fermentation is Prise de Mousse used by S. Anderson Vineyard, Chateau St. Jean, Culbertson Winery, Domaine Carneros, Domaine Chandon, Gloria Ferrer, Iron Horse, F. Korbel & Bros., Piper Sonoma Cellars, Roederer U.S., Schramsberg Vineyards, and Shadow Creek Cellars.

Levuline CHP is second-most preferred and used by Iron Horse, Scharffenberger Cellars, and Schramsberg Vineyards.

Jepson Vineyards uses Champagne 595. Ay yeast strain is used by Mirassou. S. Bayanus is the choice at Mumm Napa Valley. The Culbertson Winery selection is Pasteur and Prise de Mousse. A proprietary French champagne yeast proven at Champagne Deutz is used at Maison Deutz.

For secondary fermentation, Prise de Mousse is used at Chateau St. Jean, Domaine Carneros, Jepson Vineyards, and Roederer U.S.

Champagne 595 is preferred by Culbertson Winery and F. Korbel & Bros. A dual inoculum of Epernay and Hautvillers (another S. cerevisae) is the Mirassou choice. S. Bayanus is used again by Mumm Napa Valley. Levuline CHP is used by S. Anderson Vineyard, Iron Horse, and Scharffenberger Cellars. Schramsberg uses either PdM or Levuline CHP.

Domaine Chandon, Gloria Ferrer (selection from Domaine Chandon), Maison Deutz, Piper Sonoma Cellars, and Shadow Creek Cellars all use a proprietary yeast.

Production parameters

S. ANDERSON VINEYARD

S. Anderson Vineyard (Yountville, CA) sources fruit from the Napa Valley. The Brut cuvee is 40% Chardonnay, picked at approximately 18.5° Brix, 1.1 TA, and 3.0 pH with 60% Pinot Noir, picked around 19.5° Brix, 1.0 TA, and 3.1 pH.

Whole clusters of Chardonnay are pressed in two fractions of 120 gal/ton (gpt) and 30 gpt. Pinot Noir has three press fractions, one of 90 gpt and the later two at 30 gpt each. Press fractions are fermented separately and blended later.

The temperature regime is 65°F for primary fermentation and 57°F to 58°F for the secondary.

The cuvee is determined in November or December following harvest, and blending is accomplished early in the spring of the following year. Reserve Chardonnay, held one year in stainless, constitutes no more than 5% of the blend.

Tannin and isinglass are used in clarification. The Brut remains en tirage for three to four years and is given a four-month rest period prior to release.

CHATEAU ST. JEAN

Chateau St. Jean (Graton, CA) Brut, a blend of 60% Pinot Noir, 25% to 30% Pinot Blanc, and 10% to 15% Chardonnay is produced from 100% Sonoma County grapes with a major emphasis on cool Russian River Valley sources offering the fruit extended hang time.

Picking parameters are as follows: Pinot Noir at 19° to 20° Brix, 1.0 to 1.2 TA, and 3.0 to 3.2 pH. Chardonnay and Pinot Blanc are harvested at 19.5° to 20.5° Brix, 1.0 to 1.2 TA, and 2.9 to 3.2 pH.

Juice from whole clusters in three press fractions of 120 gpt, 25 gpt and 15 gpt are fermented separately and blended later.

Primary fermentation is carried out at 65°F to 68°F. Secondary fermentation is 50°F to 55°F.

The cuvee, which represents only wines of the vintage are blended in November or December following harvest.

Bentonite at ¾ lb/1,000 gal is employed to aid clarification. The wine is kept en tirage for two to three years and is released after a minimum rest period of 60 days.

CULBERTSON WINERY

Culbertson Brut (Culbertson Winery, Temecula, CA) is a blend of 60% Chardonnay, sourced from San Luis Obispo and Riverside counties, picked at about 20° Brix, 1.0 TA, and 3.15 pH; 35% Pinot Blanc harvested in Riverside and Monterey counties at 19° to 20° Brix, 0.80 to 1.0 TA, and 3.25 to 3.3 pH. Five percent Pinot Noir, sourced in San Luis Obispo and Santa Barbara counties, comes in at 19.5° Brix, 1.0 TA, and 3.1 to 3.2 pH.

Central Coast grapes have a high fruit profile and excellent chemistry to produce a wine with fruit vitality.

Depending on grape quality, whole clusters are usually pressed in two fractions of 130 gpt and from 130 to 160 gpt. When necessary, must is acidulated to a TA of 1.0 and pH of 3.0 to 3.2 with tartaric and malic acids.

Primary fermentation temperatures range 58°F to 62°F with the last two to three percent at 65°F to 70°F. Secondary fermentation is at approximately 58°F.

Blending is done between November and January following harvest. Four to six percent of the cuvee, is wine from the same vintage, barrel-fermented and aged four to eight months in 130-gal, three to four-year-old French oak cooperage.

About 3% of the cuvee is wine from the previous vintage and approximately 1% is two-year-old reserve wine.

Bentonite, Adjuvant 84, and isinglass are employed as clarifying agents. It takes two to three years en tirage to achieve the desired maturity level and flavor development. To maintain the Brut character, a sugar dosage of 1.25 grams/100 mL is added. The wine is released after a minimum of six weeks bottle rest.

DOMAINE CARNEROS

Domaine Carneros Brut is produced from 100% Carneros region fruit. It is a blend of Pinot Noir, Chardonnay, with minor additions of Pinot Blanc, and Pinot

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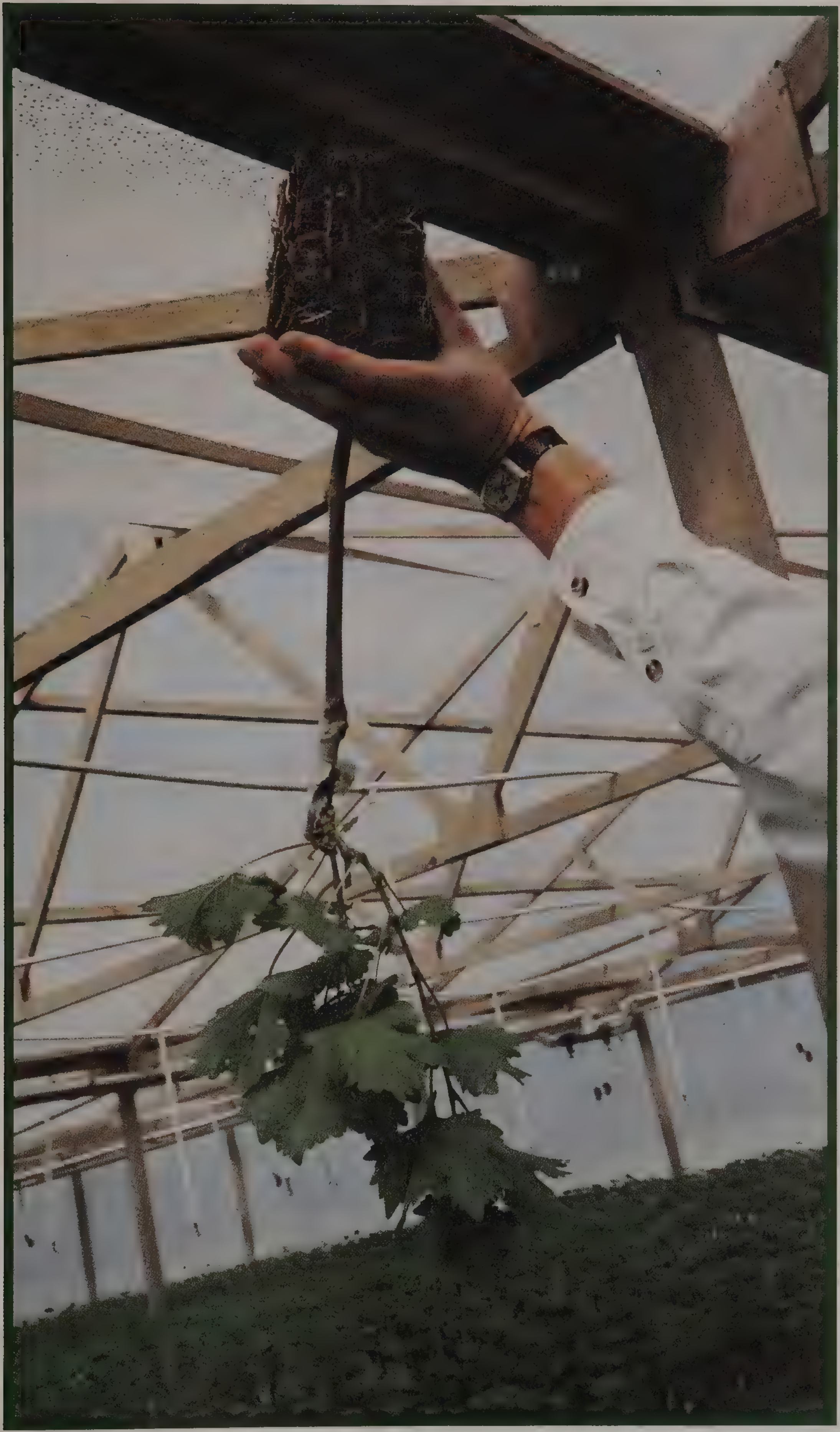

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Meunier. "The long growing season of Carneros allows maximum maturity which in turn creates body and a lengthy finish," Eileen Crane contends.

Picking parameters are in order of pH, flavor, TA, and Brix. A typical window for Pinot Noir is 17.5° to 19.5° Brix, 0.95 to 1.2 TA, and 2.85 to 3.05 pH. Chardonnay is 18.0° to 19.3° Brix, 0.95 to 1.25 TA, and 2.9 to 3.1 pH.

Whole clusters are pressed in two fractions of 125 and 20 gpt. A third, 25 gpt press fraction is always sold.

Primary fermentation temperature is 65°F and secondary is 55°F.

The cuvee, representing 100% wine from the vintage, is assembled in October following harvest.

Clarifiant S and Adjuvant 84 are clarifying aids. The wine remains en tirage for two to three years, or longer if necessary. A sugar dosage of 9 g/L is used and the wine rests for three to six months before release.

Domaine Chandon

Chandon Brut (Domaine Chandon, Yountville, CA) is a blend of roughly 65% Pinot Noir, 20% Chardonnay, 10% Pinot Blanc, and 5% Pinot Meunier, ⅔ Napa Valley grapes and ⅓ grapes from the Sonoma-Carneros region.

Physiological maturity is the principal picking criterion. All varietals are picked with a pH less than 3.1. Pinot Noir averages 18° to 20° Brix, Chardonnay 18.5° to 19.5° Brix, Pinot Blanc 20° to 21° Brix, and Pinot Meunier 18° to 20° Brix.

Three press fractions are taken from all four varietals and fermented separately. The first two press fractions are used for sparkling wine. Reserve wine is added during primary fermentation.

Depending on the vintage, a part of the the wine may undergo MLF. "It takes the edginess off the acidity," Dawnine Dyer maintains.

About 15% reserve wine, blended over several years and stored in stainless tanks, is added during primary fermentation. Up to 10% reserve wine may be added at blending, making the wine approximately 85% current vintage, 12% previous vintage, 2% two-year-old reserve stock, and 0.5% three-year-old reserve wine.

Adjuvant 84 is employed in clarifying. The wine remains en tirage a minimum of 18 months, average of 24 months, depending on development of flavors.

A sugar dosage of 0.80 to 1.0 g/L is added after disgorging. The sparkling wine rests three months prior to market release.

Gloria Ferrer

Gloria Ferrer Brut (Sonoma, CA) is blended with 80% to 90% Pinot Noir, sourced in Carneros and Alexander Valley, and 10% to 20% Chardonnay, sourced solely from Carneros vineyards.

"Pinot Noir from Alexander Valley contributes a delicacy of flavor," winemaker Bob Iantosca reports. "The Carneros Pinot adds structure and depth. This is complexed by the Carneros Chardonnay which also adds to overall structure of the finished sparkling wine."

Picking decisions are based on Brix, pH, TA, grape flavor, grape and vine condition, in that order.

Pinot Noir: 18.5° Brix, 1.10 TA, under 3.2 pH

Chardonnay: 19.0° Brix, 1.20 TA, under 3.2 pH

Whole clusters are pressed in three fractions of 125 gpt, 25 gpt, and 20 to 30 gpt. Press fractions are fermented separately and blended later with the exception of Pinot Noir press which is sold as juice in bulk and Chardonnay press which is fermented and usually sold as bulk wine.

The fermentation temperatures are 60°F for primary and 50° for secondary.

While blend percentages are proprietary, Iantosca indicates that a percent of reserve wine (from the previous vintages) is added to the must prior to primary fermentation.

The cuvee is assembled in December or January following harvest.

Clarifiant S is the riddling aid. Wine is kept en tirage for two to three years before disgorging. From 0.90% to 1.1% sugar dosage is added and the wine rests for three to six months before release.

Iron Horse Vineyards

Iron Horse Vineyards (Sebastopol, CA) uses 100% estate grapes to produce its Brut-style bottling that is 70% Pinot Noir and 30% Chardonnay. "We believe that the Green Valley is one of the unique locations for sparkling wine fruit," Rafael Brisbois says. "We are offered a natural maturity of flavors which is the most important characteristic.

"It normally comes across in Pinot Noir around 19° to 19.5° Brix, 1.1 to 1.25 TA, and 3.0 to 3.1 pH. Chardonnay normally reaches maturity at 20° Brix, with a TA of 1.0 to 1.25, and 3.0 to 3.1 pH."

Two press fractions, which are fermented separately and blended later in the process, are 115 gpt and upto 35 gpt respectively. About 10% to 30% of the primary fermentation is done in two- to four-year-old, medium toast French cooperage.

The cuvee, blended in November, is three to four months old when bottled. It remains en tirage for a minimum of two to three years and sometimes longer based on the degree of complexity gained and the market demand.

Residual sugar added as dosage is 0.70% to 0.75%. The wine rests three to four months before release.

Jepson Vineyards

Jepson Vineyards (Ukiah, CA) vintage-dated Blanc de Blanc is 100% Chardonnay from winery estate vineyards in Mendocino County.

"Choice of vineyard location was made prior to the decision to produce sparkling wine," winemaker Kurt Lorenzi says. "The Chardonnay in our vineyards has moderate varietal intensity and good balance."

A typical harvest window is 18.6° to 19.8° Brix, 0.86 to 1.1 TA, and 3.0 to 3.2 pH.

Only one press fraction of 145 to 150 gpt

Here's to sparkling wine in glittering glasses,
Wine that awakens joy like a lover's laughter.
Here's to wine that is pure,
That awakens the heart to rapture
And in gay abandon drowns each somber thought
(drinking song from Cavalleria Rusticana)

is used.

If needed, the must is acidulated to 1.0 g/100mL with tartaric acid. Primary fermentation completed 60°F to 70°F in three- to five-year-old, medium toast, 60-gal French oak constitutes 60% to 80% of the final blend. This wine is also aged in the same barrels for four to eight months.

Depending on the vintage, anywhere from 25% to 65% of the cuvee completes MLF during primary fermentation. Lorenzi reports that MLF contributes palate depth and softness and only a slight buttery aroma and flavor.

Tank fermentation of the remaining portion is completed at 55°F to 65°F. Secondary fermentation temperature is 50°F to 55°F.

The cuvee is blended two months prior to bottling in March following harvest. Bentonite is added as a riddling aid at bottling.

Wine remaining en tirage over three years was clarified with the aid of Bentonite. After disgorging, the sparkling wine is given a 0.5 g/100mL sugar dosage. Predicated on taste trials, an addition of less than 1% Jepson Alambic Brandy is added. Before release, the wine rests three to six months.

F. KORBEL & BROS.

F. Korbel & Bros. (Guerneville, CA) nonvintage Brut is a blend of Pinot Noir, Chardonnay, Chenin Blanc, and French Colombard produced from fruit sources in Sonoma and Santa Barbara counties.

According to winemaker Bob Stashak, Pinot Noir is picked with 75% colored berries at 17.5° to 19.0° Brix, 0.90 to 1.10 TA, and 3.0 to 3.2 pH. Chardonnay exhibits good varietal character at 18° to 20° Brix, 1.0 to 1.2 TA, and 2.9 to 3.2 pH.

Chenin Blanc with opulent fruit character is picked at 18° to 20° Brix, 0.90 to 1.05 TA, and 2.9 to 3.2 pH. French Colombard, exhibiting a citrus/grapefruit character is picked at 19° to 21° Brix, 1.0 to 1.3 TA, and 2.85 to 3.1 pH.

An incline dejuicer with patented juice grading and separation system is used. Grapes are destemmed and crushed prior to pressing. Pinot noir press fractions, not fermented separately, are 135 gpt, 25 gpt, and 10 gpt. For the white varietals, the press fractions are 150 gpt, 15 gpt, and 5 gpt.

Acidulation to 0.80 TA is made with citric acid.

Primary fermentation completes at 60°F to 62°F with secondary fermentation at 50°F to 52°F.

Based on previous successes, clarifying tirage with bentonite at 6 to 7g/hL is standard practice.

The cuvee, blended continuously throughout the year, includes 75% to 100% current vintage wine. It remains en tirage one to two years because it is the ageing period best suited to the desired style.

At disgorging, the wine receives a dosage of 1% residual sugar.

MAISON DEUTZ

The Home Vineyard of Maison Deutz (Arroyo Grande, CA) planted in 1982 to Chardonnay, Pinot Noir, and Pinot Blanc now accounts for more than 60% of production. Tasting small lots of the wines made from selected blocks each year guides the decision of which grapes and the percentage that will be used for the cuvees. Maison Deutz Brut Cuvee is composed approximately ⅓ of each of the three varietals.

Chardonnay is picked about 20.5° Brix with a TA of 1.2 and 2.95 pH. Pinot Blanc comes in around 18° Brix with 1.0 TA and 3.05 pH. Pinot noir is approximatley 19° Brix, 1.1 TA, and 3.0 pH.

"At Maison Deutz, the traditional methods inherent to the production of sparkling wine in the Deutz tradition are carried out." winemaker Christian Roguenant remarks. "These include use of a 'Coquard' basket press holding 8,800 lbs of grapes. Two press fractions of 546 gal and 100 gal/press load are recovered."

Primary fermentation in temperature-controlled stainless steel lasts two weeks at a temperature of 63°F.

Unlike most California sparkling wines, 100% of the cuvees are encouraged to complete malolactic fermentation to add complexity to the base wine. Clarification is accomplished with isinglass made from sturgeon. Gelatin and bentonite are also used.

The cuvee, assembled in February, consists of 20% one-year-old reserve wine retained in stainless steel, and added at the time of blending.

Secondary fermentation is accomplished at 51°F.

After a minimum 18-month ageing en tirage, each bottle is hand-riddled for five weeks and disgorged. A dosage of 0.90 g/100mL is added. The wine rests three months before release.

MIRASSOU VINEYARDS

Mirassou Vineyards (San Jose, CA) vintage-dated Brut is a blend of 70% Pinot Noir, 15% Chardonnay, and 15% Pinot Blanc sourced from Monterey County.

"Monterey provides an ideal growing climate for selected varietals, with its long cool summer that enhances both flavors and acidity," winemaker Tom Stutz remarks.

Both Pinot Noir and Pinot Blanc are picked at about 18° Brix with 1.0 TA and 2.95 pH. Chardonnay comes in around 20° Brix with 0.90 TA and 3.05 pH.

Grapes are mechanically harvested and whole berries are pressed into different cuts. Two fractions are separated, the first is 140 gpt and the second 50 gpt. Press fractions are not used.

The Pinot Blanc portion is barrel-fermented in five-years-old or older French oak barrels. The stainless portion undergoes primary fermentation at 68°F to 70°F.

The cuvee, representing 100% current vintage wine is blended in mid-November following harvest. It goes through secondary fermentation at 50°F to 55°F.

Riddling adjuvants are the Boland/Colvite combination.

The wine remains en tirage for two to three years. It receives an 0.80% residual sugar dosage and is released after a period of four weeks.

MUMM NAPA VALLEY

Mumm Napa Valley (Rutherford, CA) Brut Prestige is approximately 60% Pinot Noir, 34% Chardonnay, 5% Pinot Meunier, and 1% Pinot Gris. Pinot Noir is sourced in the Napa Valley, Carneros, Sonoma Valley, and Santa Barbara County.

Chardonnay originates from the Napa Valley, Carneros, and Sonoma Valley. Pinot Meunier and Pinot Gris are exclusively from the Napa Valley.

All varietals are picked within the following window: 19° to 20° Brix, 0.95 to 1.1 TA, and 3.0 to 3.15 pH.

Acidulation, as necessary, is done to bring the TA to 0.95 and pH to 3.1.

Four press cuts, 12.3 gpt, 110 gpt, 12.3 gpt, and 30 gpt are fermented separately beginning at 60°F and reaching a peak in the mid 70s. About 5% of the final blend is fermented in five-year-old and older French barrels.

A percentage of the cuvee, assembled in January, completed MLF prior to the alcoholic fermentation. "It contributes a complexing hit to the aroma and adds a creamy texture," winemaker Greg Fowler reports.

Depending on taste trials, a percentage of reserve wine, held in a stainless steel solera system at 55°F, is added. The final product is 85% to 90% current vintage.

Wine is kept en tirage for one to two

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years, but tasting decisions developed over time and the tasting of tirage samples every three months to track ageing, determine the full length of time.

Following disgorging, the cuvee is sweetened to between 0.8% and 1% residual sugar depending on taste. Prior to release, the sparkling wine rests three months.

PIPER SONOMA CELLARS

Piper Sonoma Cellars (Windsor, CA) produces a Vintage Brut from fruit sourced in Alexander Valley, Dry Creek Valley, and the Russian River Valley. It is 75% Pinot Noir, 15% Chardonnay, 5% Pinot Meunier, and 5% Pinot Blanc.

Pinot Noir and Pinot Meunier are picked at 18.5° to 19.5° Brix, 0.9 to 1.2 TA, and 2.95 and 3.2 pH. The Chardonnay window is 18° to 19° Brix and the same TA and pH as Pinot Noir. Pinot Blanc comes in about 17° to 17.5° Brix, 0.85 to 1.2 TA, and 2.95 to 3.3 pH.

Whole clusters are pressed in three fractions of 125 gpt, 25 gpt, and 25 gpt. The first cut (125 gpt) from each grower is fermented separately. This is not the case for the second and third fractions. All the second fractions from different growers are combined for primary fermentation. This also happens with the third fractions. Wine made from the third fractions is never used in the blend, while wine made from the second fractions is sometimes used. They are fermented separately at 55°F to 60°F.

Prior to fermentation, the juice is cold-settled for a minimum of 24 hours to 50°F with the aid of enzymes. Upon racking off the juice solids, about 1-lb/1,000-gal of bentonite is added ahead of the yeast for fermentation.

Varying by blend and year, a certain percentage of the primary fermentation completes in one to four-year-old Sequin Moreau French oak barrels with a light toast similar to that of Champagne Krug.

Again, varying by blend and year, a certain percentage of the cuvee is aged in 215L barrels and 60hL fourdre for a duration determined by taste.

The cuvee is assembled in January following harvest. Depending on taste, it may contain a percentage of reserve wine, varying in age and stored in stainless steel and oak cooperage.

Clarifiant S at 5 cL/hL is used as a riddling aid. The wine remains sur latte for two to three years. After disgorging, the final product receives a dosage elevating the residual sugar between 0.8% to 1%. A minimum two months' rest at the winery is standard practice before release.

ROEDERER U.S.

Anderson Valley is the fruit source for the 30% Pinot Noir and 70% Chardonnay Brut of Roederer U.S. (Philo, CA).

"We believe that the Anderson Valley is the 'Champagne' region of California," Michel Salgues contends. "The cool climate results in a longer period between flowering and maturity, producing a cuvee suitable for high-quality sparkling wine."

A harvest window for both Pinot Noir and Chardonnay is 18.5° to 19.5° Brix, 1.1 to 1.2 TA, and 2.95 to 3.0 pH.

Whole clusters in two fractions are pressed to 120 gpt and 15 to 20 gpt. They are fermented separately and blended later. A third press fraction is discarded or sold.

About 30% of primary fermentation is completed in one to eight-year-old Center of France cooperage with light to medium toast. The remaining 70% is fermented in stainless steel at 65°F. Following primary fermentation, about 20% of the wine is aged in 1,100 gal French oak for one to five years.

Reserve wine is added to the cuvee in February following harvest. About 80% to 90% of the final product is wine from the current vintage.

The riddling agent is bentonite at 3.5 g/hL. The wine remains en tirage for two to three years. The exact time is determined by tasting.

Residual sugar level of the final product adjusted by dosage is 0.8% to 1%. The wine rests for six to eight months prior to release.

SCHARFFENBERGER CELLARS

Scharffenberger Cellars (Philo, CA) Brut is currently 70% Pinot Noir and 30% Chardonnay. Subsequent cuvees will have an increase in the percentage of Chardonnay. Fruit is sourced principally in the Anderson Valley with some additional from the Potter Valley.

"Anderson Valley is the coolest growing area in northern California," winemaker Tex Sawyer maintains. "The soil has low fertility, but adequate water. Potter Valley is slightly warmer, but with a similar soil profile."

Optimum picking conditions for both varietals are 18.5° Brix, 1.1 TA, and 3.0 pH.

Whole cluster pressing yields cuvee of 120 gpt followed by one fraction of 25 to 30 gpt after settling, which are fermented separately and blended later.

Occasionally, the first cut or baille will be acidulated with tartaric acid to 10 g/L.

Center of France cooperage (minimum four-years-old and fire bent with no additional toast), is used to barrel-ferment 5% of the final product.

Primary fermentation temperatures start at 55°F, but are allowed to rise to 68°F at the end of primary fermentation to aid completion of MLF. Fifty percent of the cuvee completes MLF. "It softens and adds complexity and roundness to the wine," Sawyer contends.

About 5% to 10% reserve wine is held in stainless tanks for blending forward to maintain consistency of style and add complexity to the blend.

The cuvee is blended in January following harvest. It consists of 90% to 95% wine of the vintage. Clarification is made with Drifine brand Isinglass and pad filtration. Prior to bottling, Adjuvant 84 riddling aid is added to the yeast and dosage mixture.

The sparkling wine remains en tirage for approximately 24 months. After disgorging, final reducing sugar is added at 1% and the wine remains at rest for three to six months.

SCHRAMSBERG VINEYARDS

Schramsberg Vineyards (Calistoga, CA) Blanc de Noirs Brut is 80% Pinot Noir, 10% to 15% Pinot Meunier, 5% to 10% Chardonnay and no more than 5% Pinot Blanc produced from Napa Valley fruit sources.

In some years, small amounts (1% to 5%) of experimental lots from Santa Barbara, Mendocino, San Luis Obispo, and Sonoma Counties are blended in.

Typical harvest parameters are:

Pinot Noir: 17.5° to 19.5° Brix, 0.9 to 1.1 TA, and 2.9 to 3.2 pH

Pinot Meunier: 18° to 19° Brix, 0.75 to 0.95 TA, and 3.1 to 3.3 pH

Chardonnay: 18° to 20°Brix, 0.9 to 1.1 TA, and 2.9 to 3.3 pH

Pinot Blanc: 18° to 19° Brix, 0.8 to 0.9 TA, and 3.0 to 3.2 pH

Whole clusters of Pinot Noir, Pinot Meunier, and Chardonnay are pressed in two fractions at 110 gpt and 40 gpt. Pinot Blanc's two fractions are 80 gpt and 70 gpt. Press fractions of Chardonnay and Pinot Blanc are fermented separately and blended later. This is not the case with Pinot Noir and Pinot Meunier.

Approximately 10% of the final blend was fermented in medium toast French oak, older than three years.

At inoculation, the primary fermentation temperature starts at 50°F and is allowed to rise to 65°F until 2° Brix when it rises to 70°F to complete.

Following primary fermentation, 10% of the cuvee is aged in barrels and puncheons for four to six months.

To add softness, complexity, and appeal, about 20% of the final blend is allowed to complete MLF simultaneously with the alcoholic fermentation. Bentonite at 1.0 lb/1,000 gal is used for protein stability.

The cuvee is assembled within six months of the harvest. Occasionally, it may contains 1% to 2% reserve wine averaging three years old that was separated by varietal and vintage, and stored in puncheons.

Secondary fermentation is constant at 60°F. Bentonite or a proprietary bentonite-based adjuvant is used at 0.25-lb/1,000 gal as the riddling aid.

In about 4.5 years, when the wine softens and develops aromas and flavors characteristic of the style, it is disgorged and given a residual sugar dosage to 0.75% to 0.9%.

Occasionally based on tasting of trial-dosaged wines, California alambic pot-still brandy or cognac is added at the level of 0.5% to 1%.

The resting period on the cork after disgorging is three to six months before release.

Somber thoughts

While the drinking song from Cavalleria Rusticana indicated that sparkling wine should drown somber thoughts, California MC producers, who saw production numbers steadily increasing in the decade of the 1980s are now faced with a slowing demand for their product — a somber thought indeed.

When compared to the sluggish sales of French champagne, however, the marketing picture looks brighter. Recently, the wine press has been quick to point out the excellent quality and price/value relationship of California MC bottlings when compared to French champagnes.

"Champagne could not endlessly increase its vineyards," Champagne Deutz owner Andre Lallier comments. "Each hectare could not produce more each year. There had to be a day when the Champenois would face stabilizing sales. Voila! It has happened. In 1991, champagne houses saw a return to a total sale of 200 million bottles, which it should never have surpassed.

"A large harvest combined with slow sales will bring back a good balance between demand and supply. After 25 years of continuous shortage, this is a new situation that the Champenois will have to handle.

"Champagnes will benefit from maturing longer. It would be a pity if the recently built up stocks were sold off at cheap prices."

Those predicting a major reduction in champagne prices may not see it if the words of Lallier are heeded by owners of other champagne houses.

The obvious marketing ploy for California MC producers is stabilization both of production and price to capture a larger market share, before other sparkling wine producing regions capitalize on champagne's very high prices and static production.

Champagnes have a luxury appeal. It would seem that a few producers like Domaine Chandon, with release of it's Etoile luxury cuvee and Schramsberg with its yet-to-be-named upcoming prestige cuvee, will pave a new market path for sparkling wine in glittering glasses. ■

PWV *thanks Mumm Napa Valley for hosting the tasting and the following winemakers for serving on the tasting/discussion panel: Gary Galleron, S. Anderson Vineyard; Patricia Howe, Domaine Chandon; Raphael Brisbois, Iron Horse Vineyards; Paul Ahvenginen, F. Korbel & Bros; Greg Fowler, Mumm Napa Valley; Rob McNeill, Piper Sonoma Cellars; Michel Salgues, Roederer U.S.; Alan Tenscher, Schramsberg Vineyards.*

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CLAYEY SANDY	RIPARIA GLOIRE 101-14, 420A 3309C	1103P, 44-53 3309C	RIPARIA GLOIRE 1616C	1103P 44-53, 110R 140R
CLAY LOAM	RIPARIA GLOIRE 1616C, 101-14 3309C, 420A	1103P, 44-53 3309C	RIPARA GLOIRE 1616C	1103P 44-53, 110R 140R
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Sparkling food complements

By Eleanor & Ray Heald

Chef Phillippe Jeanty of Domaine Chandon

When it comes to pairing sparkling wine with food, there is no other California winery with more experience than Domaine Chandon. Since 1973, Domaine Chandon, in Yountville, CA, has used its full-service restaurant at the winery to perfect the art of pairing food with their wines.

Domaine Chandon's Executive Chef, Philippe Jeanty, discussed with ***PWV*** the pairing of sparkling wines and food. Taking the Chandon wines one by one, he discussed the wine descriptors, desirable food characteristics, and suggested foods and flavors.

Jeanty divides wine aromas into those related to fruits, spices, flowers, carmelization, and cream.

For the Chandon Brut, he describes the fruit aromas of apple, pear, lemon, and berry; floral aromas of roses; and carmelized aromas, associated with yeast ageing, of malt and vanilla.

Jeanty suggests that harmonizing foods emphasize spice, cream, nuts and carmelization plus a lightly smoky note. Specific food and flavor suggestions include: eggplant, carmelized onions, cooked tomatoes, garlic, white fish, oysters, mussels, sushi, thyme, southwestern cuisine, chicken, mushrooms, and truffles.

"The wine works well with fresh oysters without lemon or cocktail sauce because of the contrast in the acidities," Jeanty explains. "Mussels, on the other hand, accentuate the Chardonnay character of the cuvee. The sweet-smoky flavors of carmelized onions also harmonize with the wine."

Chandon Blanc de Noir is 100% Pinot Noir with a strong emphasis on the character of berry fruits. According to Jeanty, the fruity aromas include berry, cherry, and orange; cola is the spice aroma; rose is the floral aroma; and cocoa is the carmelized aroma.

Complementary food characters must focus on spice, fruit, sweetness, and cream. Grilled lobster, roasted salmon, rabbit, fresh goat and mild cheddar cheese, basil, tarragon, rosemary, mint, cinnamon, chocolate, and spicy southwestern and, Oriental cuisines are suggested.

"Spicy cuisines work with sparkling wines because the wine's bubbles and textures refresh and cleanse the palate," Jeanty says. "Even spicy Mexican foods, such as tamales, are great with the Blanc de Noir."

Chandon Reserve's varietal composition resembles the Brut, but the selected cuvee is aged on the yeast in excess of four years for increased complexity.

"The Chandon Reserve, with its greater complexity, complements a wider range of food styles," Jeanty explains. "The wine can stand on its own; it can harmonize with food, or it can contrast with the food. Wines with simpler berry, citrus, or tree fruit character are more difficult to pair with food because the focus is narrower."

Jeanty describes the Chandon Reserve as having carmelized aromas of malt, vanilla, and butterscotch; creamy aromas of soy and sour cream; and the spicy aromas of vermouth.

Foods that accompany the Reserve should emphasize oiliness, cream, richness, smoke, salt, and carmelization. Smoked and salted fish, salmon, pork, sausages, game, garlic, carmelized onions, mushrooms, oregano, mustard, and cooked tarragon are recommended.

"For me, the champagne character is a complex melange of yeast, toasted bread, earthiness, terroir, mushrooms, truffles, and cave aromas," Jeanty emphasizes. "It contrasts well with the oily, smoky, saltiness of salmon and caviar."

Chandon Club focuses on Chardonnay from Domaine Chandon's Mt. Veeder vineyards. Ageing six years on the yeast lees results in a complex yet fruity wine.

Jeanty likens the fruity aromas to lemon peel and green apple; creamy aromas to soy and sour cream; and carmelized aromas to honey, malt, and butterscotch. Food should emphasize oily, salty, creamy, and fruity characteristics.

Oysters, poached sole, smoked seafood, seafood pastas, dill, basil, orange, lemon, papaya, garlic, and light cream sauces are recommended.

"The Chandon Club has a green-apple freshness from the Mt. Veeder Chardonnay that matches it well with fresh oysters. The combination can be adjusted to taste by addition of lemon to the oysters. The creamy texture of poached sole acts as a contrast to the lemon freshness of the wine. Onions, either poached or baked with a white-fleshed fish, enhance the creaminess of the dish. The wine cuts through the creaminess on the palate and keeps the palate refreshed."

Jeanty hesitates to state general rules about wine and food match-ups, since wines and foods change from vintage to vintage and season to season. "You're walking a very fine line between having a combination that harmonizes and one that clashes. It is necessary to continually taste in order to make it work. Readers should not take my recommendations as gospel, but only as guidelines.

"When pairing wine and food, complements and contrasts must be assessed. For instance, judge how well the following pairs work together: soft and crunchy, fish with nuts, creamy and zesty, spicy and mild, cream sauce versus lemon, or taco heat with sour cream.

"Sparkling wines offer a number of tactile sensations — bubbles, textures, and mouthfeel. People like new sensations. When I was a child in France, my grandmother gave me a Camembert sandwich with a piece of chocolate. It was fantastic with sparkling wine.

"Camembert, brie, or St. Andre are cheeses with a high percentage of butterfat, and the creamy textures are cleansed by the wine. Think about what you eat with cheese. Grapes, pears, or apples tend to accomplish the same thing as sparkling wine — they cleanse the palate.

"Chocolate and raspberries harmonize because the acidity of the fruit cuts through the creamy textures of the chocolate. This is why chocolate is a complementary contrast to a fruity sparkling wine.

"Caviar works with sparkling wine, especially if served with other garnishes such as onions, chopped eggs, sour cream, and crunchy toast. Chopped eggs or sour cream offer a textural element that cuts the saltiness of the caviar. The onion works to cut the fishy character and the crunchy toast offers an auditory diversion.

"Caviar also can be incorporated into cream sauces for poached fish. Again, the sparkling wine brightens the taste impression. With poached halibut or turbot, caviar can be used as a garnish. This allows diners to incorporate the caviar into the dish as suits their taste, creating a personalized sensation with the dish and the wine.

"The purpose of this discussion is to encourage people to think about wine and food, not to take my suggestions as black and white rules." ■

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Chenin Blanc on allocation? *you'd better believe it!*

By Millie Howie

"Consumers are beginning to realize that a good quality Chenin Blanc is a terrific alternative to low-end Chardonnays," comments David Stare, owner, Dry Creek Vineyard, Healdsburg, CA. And he can cite statistics to back up that claim.

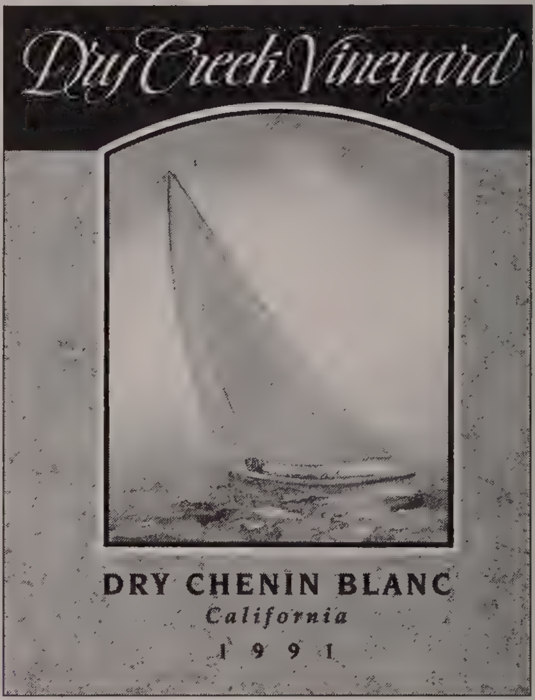
Stare always has produced a Chenin Blanc that basically is dry, but not completely. "If you make Chenin Blanc bone dry," he says, "it comes across harsh and not very exciting. Typically ours shows 0.7% R.S., right at the threshold of perception of sweetness, which is just enough to enhance the fruity taste."

The Dry Creek style of dry Chenin Blanc, Stare says, is influenced by wine he tasted when he met Jean Baumand, a winemaker in the Anjou region of the Loire Valley. "One of Baumand's principal wines was Savennieres, a dry Chenin Blanc, and I liked that wine very much. If there is any one wine we're patterned after, it's that — with a melony, pineappley style."

The Dry Creek dry Chenin is a young wine, usually bottled the first week of December for release January 1. Winemaker Larry Levin says, "There's no oak. It's cold-fermented in stainless steel to preserve its delicate fruitiness. There is minimal dissolved CO_2. We don't strip it out, or add. It just dissipates by the time we bottle. The TA at bottling is always about 0.75."

Originally, all the grapes came from Sonoma County, but Stare says it's hard for a grower to accept $300 to $500/ton for Chenin when the same land can grow Chardonnay that can sell for $1,200/ton. "We had 25 acres ourselves, but we T-budded it to Sauvignon Blanc and Chardonnay, and most of the other growers have done the same thing," Stare says.

"When we started looking for an outside source, we bought grapes from Mandeville Island in the Sacramento River Delta, but for the past four or five years, we've been buying exclusively from Clarksburg, also in the Delta. The wine has been a blend of about ⅓ each from Sonoma, Mendocino, and Clarksburg. The 1991 is 100% Clarksburg grapes."



Soil and climatic conditions in Clarksburg create richer fruit flavors in Chenin Blanc, according to Clarksburg grower Perry Cook. "A corridor of cool climate is created by an ocean breeze following the Sacramento River. The soils are highly mineralized with rich silt and clay. We don't get the fog like Sonoma and Napa counties; the coolness is drier. These conditions contribute intense varietal character to the Chenin Blanc," he concludes.

Demand creates pleasant mini-dilemma

"In 1990, we made 12,000 cases of dry Chenin Blanc," Stare states. "I thought it would last 12 months. By July, it appeared we were going to run out before the new vintage was ready. We had created a pleasant mini-dilemma."

The wine is in distribution to every state except Arkansas, and overseas in England, Holland, and Switzerland. In mid-August, 1991, Stare wrote to everyone and said, "We're having trouble supplying all the Chenin Blanc that you want. But we want you to be able to protect your existing placements. Please give us your order and pick up the wine before the end of October, or you lose it."

The distributors choose which accounts to protect. In Boston, most of the emphasis is on restaurant accounts. In New

York, it is primarily off-premise.

With the 1991 vintage, Stare increased production to over 14,500 cases. "We'd like to do more, but we're out of tank space," he says. "I just hope we don't lose the momentum by having to hold back and allocate."

Sales always have been steady; growing at a modest rate. About two years ago, when Hacienda Winery mounted their campaign, "No More Blah Chardonnays," Stare approached them to suggest a group promotion, including Hacienda, Dry Creek, and two other Sonoma County wineries who were all were pursuing the same style. Hacienda responded that they preferred to go it alone.

On his own, Stare made a major promotional push in September 1990. He and his sales representative, from Premier Distributors in Miami, FL, made a pitch to the buyer at the Ocean Reef Club on Key Largo.

"After my usual half-hour song and dance," Stare comments, "I thought he wasn't interested in my wines. Then he turned to my rep and asked him, `What about a low-end Chardonnay to use as our house white; something around $5.00 or $6.00/bottle? Come in Wednesday. We'll call in the staff and do a tasting. If there's one we like, you're in.'

"When we left," Stare recalls, "I said to my salesman, 'do me a favor and include the dry Chenin Blanc.' There were eight people at the tasting. Seven liked the Chenin Blanc best, and we were in."

Sales tips

To sell Chenin Blanc, Stare advises against saying what the wine is. "When we go into a store or restaurant, we simply tell them that we have something that tastes better than a low-end Chardonnay, that is a good price value. It always stands out.

"We make an excellent Sonoma County Chardonnay, but if we did all the things to Chenin Blanc that you have to do to make a top-quality Chardonnay, like barrel-fermentation, leaving the wine on the lees, etc., we couldn't possibly sell it for $6.50/bottle."

Throughout the years the price has remained at about $6. In 1990, the price was increased $3/case, to cover the new Federal Excise Tax. In 1992, the price will be about $6.95, Stare says. Right now, Dry Creek Chenin Blanc may be on special for as low as $4.99/bottle, although the suggested California retail is $6.50. Any other price increases will depend on decisions about new capsules.

"We would like to use all-tin," he says, "but all-tin capsules cost $.15 each, which is a little steep for a low-price wine. We are experimenting with each of the 'foil' compositions with the 1991 Chenin Blanc. We will divide the bottling into each of four types; PVC, polylaminate, all aluminum, and tin. We will use the results to determine future purchases."

The trick in selling the wine, Stare emphasizes, is getting it into the taster's mouth. "We take it to a tasting, and people think it's going to be sweet and don't want to try it. Once you get them to taste it, it's a sale.

"It's an ideal wine for by-the-glass programs, and perfect for lunch. It's less 'serious' than Fume Blanc and Chardonnay, and for most lunch foods, Chardonnay is too oaky. It's marvelous with spicy, Oriental foods, and really nice when served at a very cool temperature."

"I guess you could say, I definitely believe there is life after Chardonnay!" ■

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New technology promises superior grapevines

By James A. Stamp, Ph.D., Agritope, Inc.
Paul W. Skinner, Ph.D.,
Vineyard Investigations

Introduction

The widespread discovery of a form of phylloxera capable of destroying vines grafted to AXR#1 rootstock has stimulated a change in viticultural strategy virtually overnight in those regions of California infected by this root louse.

As a result, the demand has increased for other rootstocks available only in limited numbers in the U.S., but tested widely in Europe, Australia, and South Africa. These rootstocks offer superior phylloxera resistance and proven suitability for premium wine production in given microclimate and soil conditions.

Traditional nursery operations are challenged now with the significant task of matching limited supply with increased demand. At the same time, they must maintain output of a product with the quality characters, such as trueness-to-type and disease-free status, that growers expect.

The demand for new grapevine planting material in California alone is indeed significant. Some experts believe that growers in Napa and Sonoma counties are faced with replanting the majority of their vineyards in the next 10 years. Biotype-B phylloxera has been identified in four California counties: Napa, Sonoma, Lake, and Monterey. These counties contain almost 130,000 acres of vineyards.

In addition, the collapse of recent plantings of premium wine varieties on several of the 'new' rootstocks in California's North Coast region is believed to be due to either the presence of latent viruses or scion/rootstock compatibility problems. These observations further emphasize the need for high-quality, disease-free plant materials, and for new and improved methods of detecting disease and scion/rootstock compatibility.

The Pacific Northwest

Grapevine cultivation in the Pacific Northwest is a relatively new venture compared with that in California and the eastern United States. However, during the last 10 years, Oregon and Washington have been recognized as areas which can support the production of world-class wines. Climate and soils bear striking similarity to important wine regions in Europe, as evidenced by the considerable investment in vineyard and wineries by prestigious European groups.

Because of the seemingly remote threat from phylloxera, vines in the Pacific Northwest have not been grown on rootstock. Growers there are used to establishing vineyards from rooted cuttings of quality scion varieties purchased at less than $1.00 each.

However, in August 1990, phylloxerated vineyards were discovered for the first time in Oregon. Infested vines were removed under direction of the Oregon Department of Agriculture. By November 1990, phylloxera had been found in several vineyards in northwestern Oregon, so it was clear that the earlier discovery was not an isolated case. Phylloxera also was identified in Washington vineyards during 1991, and the rate of spread may be more rapid than in California and Oregon due to the presence of the adult, winged form of the insect.

To preserve the momentum of growth of Oregon and Washington's premium wine-producing areas, vineyard managers now are faced with the prospect of accelerated replanting with grafted material. Many previously scheduled plantings are on hold until rootstock material becomes available in sufficient quantity to satisfy grower demand.

Given the immediate requirement for high-quality, disease-free, and true-to-type phylloxera-resistant planting material, the time is right for the development of tissue-culture-based micro-propagation. Designed for rapid grapevine multiplication, this new technology offers significant promise for the wine and grape industries, beyond the immediate requirement of providing superior phylloxera-resistant material.

Possible applications include the rapid multiplication of wine varietal clones and rootstocks improved through genetic engineering; multiplication of grower-selected elite vineyard material; timely multiplication and dissemination of new materials released through importation/quarantine stations; and efficient clean-up of material of questionable pathogenic status.

Micropropagation: methods/potential

Micropropagation is used by growers and nurseries in several horticultural fields for rapid multiplication of plant material. Raspberries, rhododendrons, strawberries, orchids, and apples are just a few of the species which routinely are propagated through tissue culture on a commercial scale. Micropropagation offers several advantages over traditional propagation methods, but perhaps the most important is the rapidity of multiplication in clean laboratory conditions.

Simply put, micropropagation offers the potential to produce millions of identical, disease-free plants in a fraction of the time required by traditional propagation methods. For grapevines, this translates into the ability to produce new or superior clones or varieties much more rapidly, and to facilitate their early release to the industry.

For example, through traditional grapevine propagation methods, usually no more than 100 plants can be taken from an established stock plant each year. Micropropagation enables the production of several thousand plants in the same period.

With the relatively slow multiplication rates of traditional methods, often several sources are used as stock for propagation. This can result in the production of non-clonal material with varied genetic background.

Traditional methods also suffer from biotic and environmental stresses encountered in field conditions, which can cause significant loss and result in plants of questionable pathogenic status. Micropropagation methods permit maintenance of the disease-free status of parent source material. Subsequent bench-top growth conditions severely limit pathogen access which may occur during the more traditional methods of grafting or top-working of nursery increase blocks.

Grafting

To fully utilize the potential of grapevine micropropagation it is important to develop methods which allow efficient grafting of scion to rootstock. Traditional

Environmental growth rooms house germplasm stock material for Agritope's grapevine propagation program.

grafting methods utilize mature, woody plant material and consequently dictate considerable field growth to attain appropriate maturity. However, younger plant material resulting from micropropagation programs is physiologically superior for graft establishment and amenable to both traditional and novel grafting methods.

Because of the significant potential of micropropagation, Agritope, Inc., an agricultural biotechnology company addressing the needs of the grape industry worldwide, has invested in the development of new technology for efficient grafting of *in vitro* plant material. Proprietary grafting methods permit the production of grafted, field-ready rootstock-scion combinations as part of a biannual micropropagation program.

Because tissues are comparatively young, wound response and subsequent graft establishment are much more rapid and efficient than through traditional grafting methods. Furthermore, it is likely that the grafting of micropropagation-derived tissues will allow successful combination of rootstock and scion clones difficult to unite through traditional means.

Micropropagation process

Micropropagation strategy has been developed to foster the production of plants which can be handled by traditional means. The need to maintain the material's clonal nature has been critical in shaping this effort, and has been achieved by developing tissue-culture protocol which maintains genetic integrity.

Agritope micropropagation technology relies on the outgrowth of pre-existing axillary buds and can be divided into six stages:

(1.) **Initiation:** In early spring, axillary buds are taken from greenhouse-grown registered stock plants and sterilized, before growth on tissue culture medium. Because of the *in vitro* conditions employed, shoots soon develop from axillary buds.

(2.) **Multiplication:** Within four weeks of initiation, shoots are divided into nodal sections, each containing a node, and these are subcultured. Subcultured nodes develop into shoots as did the axillary buds during the initiation process. This repeated division and subculture forms the basis of the micropropagation multiplication cycle and is continued until sufficient shoots have been generated.

(3.) **Acclimation:** Rooted shoots are removed from culture vessels and transferred in flats to soil. To support rapid establishment, plants are grown under mist and fog conditions at high temperature in a propagation house. Within three

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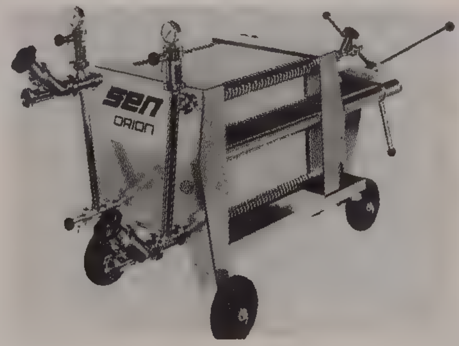

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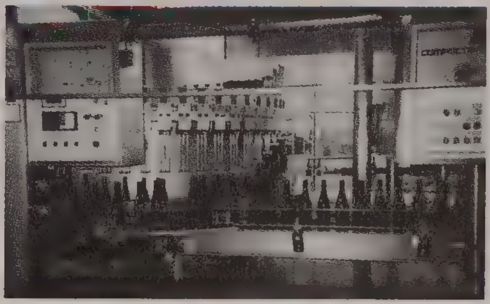

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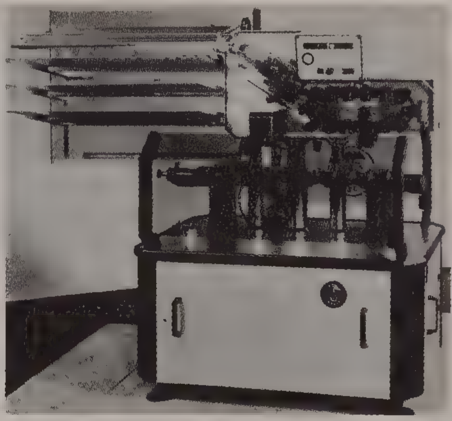

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Table I: Plant material under propagation at Agritope

ROOTSTOCK		
Cosmo 02	Millardet et de Grasset 101-14	St. George
Cosmo 10	Millardet et de Grasset 420A-03	Teleki 5A-01
Couderc 3306-01	Millardet et de Grasset 420A-04	Teleki 5A-03
Couderc 3309-03	Oppenheim #4 SO4*	Teleki 5C
Couderc 3309-04	Paulsen 1045-01	Teleki 8A
Kober 125 AA	Paulsen 1103-01	VR 039 16
Kober 5 BB	Richter 110-01	044-4
Freedom 01	Riparia Gloire 01*	4453-M
Harmony 01	Ruggeri 140	

* Material source: Saanichton Plant Quarantine Station, Sidney, B.C.

SCION		
Barbera 02	Chardonnay Esp. 352	Pinot Noir 386
Black Malvoisie	Chenin Blanc	Pinot Noir 538
Cabernet Sauvignon 07	French Colombard	Sangiovese 02
Cabernet Sauvignon 08	Grenache	Sangiovese 03
Chardonnay 04	Merlot 01	Sangiovese 04
Chardonnay 08	Mourvedre	Sauvignon Blanc
Chardonnay 75	Pinot Gris Col. 146	Shiraz
Chardonnay 78	Pinot Noir 113	Viognier 01
Chardonnay 95	Pinot Noir 115	Zinfandel
Chardonnay 96	Pinot Noir 375	

weeks, plants are transferred to a regular greenhouse for further growth.

(4.) **Growth:** With careful management, plants grow vigorously and are ready for grafting within four months of leaving laboratory conditions. At this time, rootstock and scion materials will have attained a diameter suitable for grafting, 12 inches above the soil level.

(5.) **Grafting:** Through proprietary methods, a scion stem-section is grafted to the rootstock. Plants then are maintained under conditions designed to facilitate graft establishment.

(6.) **Finishing, Dormancy, and Shipping:** During the winter months plants fall dormant. Scion shoots are cut back and rootstocks are trimmed as materials are readied for shipping. Plants, dormant and in bands or bare-rooted, will be shipped via road or air, to arrive at their destination in time for spring planting schedules.

To date, these methods have been developed for over 40 rootstock and scion varieties (see Table I).

Micropropagation applications

Micropropagation has many applications, including:

- Phylloxera in the western U.S.: Micropropagation can provide growers with sufficient phylloxera-resistant planting material to allow replanting, and continued expansion of the grape and wine industry. Desirable rootstock, budwood, and grafted materials need to be available to growers in unlimited quantity, ready for field planting, and should be vigorous, uniform, true-to-type, and disease-free.
- Evaluation of pathogen status and compatibility potential: An ELISA assay for fan leaf virus currently is used to screen material after removal from tissue culture. Also, stress conditions encountered in transferring micropropagated plantlets to greenhouse acclimation may be useful in screening for weakened or diseased plants.

New, proprietary green-grafting techniques currently are being investigated to determine their usefulness in the early detection of leaf roll and corky bark viral pathogens on other than traditional indicator varieties. The use of these techniques may allow for the screening of grapevine viral diseases and graft compatibility far more rapidly than through traditional methods.

- Pathogen eradication-international germplasm transfer: Meristem culture, thermotherapy, and chemotherapy are technologies that have been used successfully for pathogen eradication in a number of species. A concerted effort to optimize and adapt these technologies to grapes is essential and would result in a significant decrease in the delays encountered in new clonal releases.

As with other crop species, such as potato and cassava, production of certifiable pathogen-free material that can be maintained in a sterile environment should have very significant implications for international transfer of grape clones.

- Elite clones: Because of the production capacity of large numbers of true-to-type, disease-free plants from very limited tissue supplies, micropropagation especially is useful for the rapid multiplication of grower-selected elite stock.

Prior to tissue-culture multiplication, scion material should be evaluated for pathogenic status. The grower also should evaluate it for desirable characteristics, such as cluster and berry size, berry maturation, and flavor. The parent vineyard then could access the selected, elite clonal material in unlimited numbers, grafted to a rootstock of choice.

- Rapid release of clones new to the U.S. industry: Micropropagation would allow timely multiplication and release of new clones processed by the U.S. and Canadian import and quarantine authorities.
- Germplasm conservation: By utilizing minimal growth conditions, multiplication rates of grape tissue cultures can be retarded significantly without loss of quality. This translates into the ability to maintain grape clonal material for years in conditions free from the biotic and environmental stresses responsible for the destruction of precious selected stock in vineyard conditions. When plant materials are required, transfer to rapid multiplication conditions would permit the production of large numbers of plants.

Genetically engineered products

Grapevine genetic engineering will enable the development of superior clones of established traditional rootstock and scion varieties. Like all important crop plants, grapevine productivity suffers significantly through the effects of biotic and environmental stresses.

Unlike other crops, however, traditional breeding methods are not appropriate for grapevine because they result in rearrangement of genetic material. Consequently, this disrupts the subtle characteristics which lend the identity of a premium wine or desirable rootstock.

Genetic engineering methods are ideal for heterozygous crops like grapevines because they permit maintenance of the genomic integrity of the target species. These methods allow the addition of desirable genes or elimination of undesirable genes, while maintaining varietal and clonal character.

A comprehensive strategy would be to develop both rootstock and scion clones with improved resistance or tolerance to various stress factors. It would be beneficial to afford rootstock material of superior resistance to phylloxera or the nematode *Xiphinema index*, as these pathogens are considered among the most serious threats to U.S. viticultural productivity. Targets for scion varieties include improvement of resistance to pests such as Omnivorous Leafroller and Western Grape Leaf Skeletonizer, or various fungal pathogens such as *Eutypa*.

Once superior disease- and stress-resistant grapevine varieties have been engineered, micropropagation would be suited ideally for rapid multiplication of new stock to enable timely release for field trials and grower evaluation.

Through its micropropagation program, Agritope will make phylloxera-resistant Vitrovine™ brand grafted grape plants available in large numbers to growers. The Eliteclone™ program will allow for rapid multiplication of grower-selected material of superior quality and, in combination with laboratory germplasm conservation methods, ensure that ancient and valuable clones are not lost.

Agritope also is researching superior methods for pathogen eradication *in vitro* and is involved in the development of rapid field-use diagnostic assays. Easy-to-use diagnostic assays will complement pathogen eradication procedures in the laboratory and will allow for assessment of pathogenic status of vines in field conditions before symptoms become apparent.

Agritope has established a genetic engineering program geared toward the efficient transfer of foreign genes to grapevine. This effort is paralleled by a study of potential genes of interest. In light of successes with other crop species, Agritope has targeted a number of biotic stresses for improved grapevine resistance, including insect, viral, and fungal pathogens. Progress at Agritope indicates that field trials of genetically engineered grapevine plants should commence in 1997. ■

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Ohio winery restaurants spur wine sales

By Millie Howie

Folks around Geneva, Ohio, know what wine goes great with Fried Mozza, Fettucine Alfredo, and the house lasagne. They know, because when they dine at ***Ferrante's****, a small winery outside Cleveland, the wines are made from grapes growing right outside the restaurant windows.*

▼ **Ferrante's** produces 8,000 cases/year and is just one of many Ohio wineries with restaurants on-site. Some are open only certain days of the week, and offer a limited menu, or assorted cheeses and breads. Others, like Ferrante's, are specialty houses that win almost as many awards for their food and decor as they do for their wines.

Lunch and dinner is served at Ferrante's daily, except Super Bowl Sunday. Much of the lunch business comes from local businesses and senior citizen's groups. There is a dance floor, with live entertainment every Friday and Saturday evening. The restaurant, which incorporates the winery tasting room, is also a destination for bus tours and travel parties. Prices are modest ($8 to $13 for an entree), as they are at most of the winery restaurants throughout Ohio.

Once customers have been seated, a well-trained server always asks their wine preference. Specific recommendations are offered only if the patron seems unfamiliar with or uncertain about wines.

Wm. Graystone Winery banquet room

"Forget the red wine with meat; white with fish," scoffs Nicholas Ferrante. "All of our wines go well with food. More than 95% of the crowd orders wine at bottle prices of $7 to $13, and 75% of our wine sales are attributable to the restaurant. Also our three-county local distribution is more successful because of the restaurant."

▼ At the 1,000-case/year **Hafle Vineyards** near Springfield, Dan Hafle features homemade lasagne and fettucine feeds, at the outdoor grill, each Friday and Saturday. These, according to Dan, are even better when served with blends of locally-grown Seyval, Chancellor, and Delaware.

All Hafle wine sales are through the restaurant, which serves 50 to 100 meals each summer night, and up to 70/night during the winter. About ½ of the patrons order wine with their meal at bottle prices of $5 to $7, and there is also a full bar.

"We're not in a principal wine-growing region of the state," Hafle remarks. "This is corn and soybean country. But everyone eats. The restaurant attracts the people and we have a chance to show off our wines. Many diners take a bottle home."

On summer evenings a guitarist and singer offer entertainment, and Hafle has a festival on Labor Day weekend. The facility, which is housed in an 80-year-old Amish horse barn, is being enlarged and remodeled.

▼ Probably the largest and oldest of the winery/restaurant operations is **Valley Vineyards** in Morrow, which serves dinner only, each Friday and Saturday night. From the end of June through October, owners Ken and Beth Schuchter serve nearly 400 diners/night, in the dining room and outside patio, between 6 and 9pm. During the winter months, when it's too cold to use the patio, the count drops to 200/night.

The $30-per-couple meal includes one bottle of wine, from the 14 different wines offered on the list. Production at Valley Vineyards, one of the largest wineries in Ohio, is 30,000 gallons/year of Vidal, Seyval, DeChaunac, honey mead, and a blanc de blancs sparkler.

"The restaurant is a great way to advertise wine," says Ken. "We've been here 20 years, and 80% of wine sales are on-premise. People come out for dinner, take a bottle of wine home to share with friends, and come back and bring other diners." The other big draw, according to Beth, is the homemade pie.

Questions about the wines, in the restaurant and in the separate tasting room, are easily answered by the staff, most of whom are family members, or long-time employees.

▼ Bill and Jane Butler, owners of Wyandotte Winery, in Gahanna, OH, established a second winery, **William Graystone**, in the German Village district of Columbus. The winery site was formerly the Schlee Bavarian Brewery, more than 100 years ago. The winery name is a combination of Bill's first name and a description of the gray limestone architecture of the old plant.

William Graystone opens for breakfast at 7am, serving fresh-roasted and ground coffee. Lunch is deli service, with sandwiches and a soup du jour. At night, the historic Graystone banquet room is available for private parties, and can handle 80 for a sit-down dinner. All food is prepared on the premises.

"We make 12 different wines," states Bill, "everything from a dry Chardonnay to Raspberry and Cranberry dessert wines. We buy grapes from Ohio, Michigan, and up-state New York."

Graystone wines are bottled under 'Columbus Classics' labels, each bearing a watercolor of an Ohio landmark by artist Bonnie Weir. Tastes of wine at Graystone, by state law, cost $.50 each. Visitors also may purchase a bottle at retail (price range $6.95 to $8.95), and enjoy it with a complimentary platter of assorted cheeses.

▼ Dining with a river view is part of the charm of **Moyer Vineyards, Winery and Restaurant** owned by Ken and Mary Moyer, outside Manchester on the Ohio River. Ken and Mary both cook for the restaurant. Ken's specialty is a tasty bean, cheese, and bacon soup. Mary's entrees include fettucine with shrimp, eggs Benedict, poached scallops, and her secret-recipe apple/walnut cake.

Moyer wines include Chambourcin, Vidal Blanc, a brut champagne, strawberry, and raspberry. All the fruit is grown in Ohio, and the wines are made in the winery below the restaurant. Wine sales in the winery account for 55% of the total, with by-the-glass ($1.95 to $2.50) and bottle sales ($5.25 to $11.50) in the restaurant contributing 40%. The staff is encouraged to taste all the wines, and make their own recommendations.

Saturday is the restaurant's busy day, with as many as 400 to 500 guests. Many drive 70 miles from Cincinnati, or arrive on group tours. Lunch patrons are predominantly from local residences and businesses.

▼ **Mon Ami Restaurant and Historic Winery**, on Catawba Island at Port Clinton, is famous for its champagnes, ranging the color spectrum from brut to pink to sparkling burgundy. The winery is in an ivy-covered, limestone building, constructed in 1872 with a two-story underground limestone wine cellar. The dining room, Chalet Lounge, garden patio, banquet rooms, and gift shop welcome visitors above ground.

Wines are available, by-the-glass ($2.25 to $2.75), and by the bottle ($7 to $15), in the Chalet and the dining room. Retail sales are available in the gift shop.

In the warm-weather months, Mon Ami Restaurant serves between 800 and 1,000 diners/day in the garden/patio area and Chalet. Popular lunch and dinner entrees include Lake Erie walleye and perch, aged prime rib of beef, duckling, veal and pasta dishes, and an extensive selection of lighter fare.

The cozy Chalet, with a circular fireplace, warming food and drink and lively entertainment, is a popular gathering spot throughout the winter months.

Ohio wine marketing

In Ohio, wineries and restaurants work closely together. The Ohio Wine Producers Association (OWPA) offers a program which can include development of wine lists and comprehensive staff training. There are worksheets which cover every subject, from grape varieties to the basic principles of selling wine in restaurants.

Samples of all these materials and information about wine promotion in Ohio is available free from the OWPA. Address requests to Doniella Winchell, executive secretary, Ohio Wine Producers Association, 822 N. Tote Rd., Austinburg, OH 44010, or call 216/466-4417. ■

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Successful preparation: yeast

By K.C. Fugelsang
California State University, Fresno

Wine yeasts are available to the winemaker in dehydrated form, on agar slants, and in already-expanded liquid culture. The decision as to which to use depends (in part) upon whether or not the desired strain is available in dehydrated form and, if not, the cost of purchasing, maintaining, and expanding 'specialty' cultures.

Propagation from slants

Successful utilization of cultures requires the technical support and expertise to expand the culture, without contamination, to a final starter volume that represents from 1% to 3% (v/v) of the total volume of must to which it will be added.

Several loopfuls of the culture are initially transferred from the slant to approximately 100mL sterile grape juice. Some winemakers contend that undiluted juice may represent an unnecessarily hostile environment for yeasts transferred directly off agar slants (Shelton, 1992). Rather, they recommend initial transfer to approximately 100mL autoclaved sterile nutrient broth. Subsequent transfers are made into nutrient-supplemented, pH-adjusted (pH 3.5) juice diluted with water (60/40). Final transfer is made into pH-adjusted, undiluted juice. When doing pH adjustments, calcium or potassium carbonate or potassium hydroxide are recommended.

Where juice (or dilutions of juice in water) are used, sterilization prior to inoculation may be achieved by membrane filtration or heat treatment of unsulfited free run juice. At C.S.U. Fresno, we have successfully used dimethyldicarbonate (DMDC or 'Velcorin') at approximately 350-mg/L for this purpose. Produced by Mobay Chemical and distributed by Scott Laboratories, Velcorin quickly kills contaminants present and has the distinct advantage (when compared with heat sterilization) of not degrading juice. However, it is an irritant and laboratory personnel should approach the product with due caution. Additonally, it is not immediately soluble in juice (or wine) and requires a period of time (temperature dependent) for complete inactivation of microbes present and decomposition of residual DMDC to methanol and carbon dioxide. At C.S.U. Fresno, we generally setup and add the sterilant to juice in the evening (thus allowing approximately 12 hours for complete reaction) and transfer yeasts the next morning.

Once the starter culture is actively growing (as monitored microscopically or visually by increased turbidity and foam formation), the volume is expanded two-fold using sterile juice. From this point, the culture is expanded in a series of 5 to 10-fold increases to yield the final yeast inoculum. Depending upon culture temperature and desired final volume, this may take a week or more.

After addition of yeast inoculum to starter tank, 48 to 96+ hours may be required before the starter reaches sufficient population density to add to must. At each step, growth should be followed microscopically, noting viability, and percentage of budding cells, as well as presence of microbial contaminants (*i.e.* lactic acid bacteria). In actively growing starters, budding cells, upon addition to the must, should comprise 60% to 80% of the total cell number.

Additionally, it is recommended that the winemaker monitor starter tanks regularly for changes in volatile acidity and malate which would suggest presence of competitive spoilage microbes which have escaped direct microscopic examination.

The starter should always be utilized **before** all available sugar is exhausted. Allowing the yeast's energy source to become depleted prior to transfer, significantly increases the potential for subsequent fermentation problems.

While convenient, the practice of holding back 5% to 10% of the starter to serve as inoculum for fresh sterile juice, may cause problems for the winemaker. Over the course of the season, this practice may introduce contamination from other yeast and bacteria, thereby making the starter a source for initial introduction of spoilage organisms.

Wine Active Dry Yeast (WADY)

One way to avoid the problems associated with culture maintenance and expansion is to use dehydrated yeast (WADY). Once again, the methodology of starter preparation represents the most important step in the future performance of the yeast and ensures that the maximum number of viable cells per pound of dry yeasts end up in the fermenter. Unfortunately, this critical step is to often given only casual regard when winemakers use dehydrated yeast.

There are some vintners who simply spread the yeast pellets over the surface or mix into the must. However, the technically more correct protocol calls for prior rehydration in warm water.

Kraus, *et.al.* (1981), studied the effect of rehydration at cold and warm temperature and reported the optimal range to be between 37.8° to 43.0°C (100° to 109°F). They found that, at this temperature, 15 minutes was sufficient for rehydration and maximum activity.

Physically, rehydration in warm water or must tends to disperse the yeast to a much greater extent than is seen when added to cold must. In the latter case, pellets tend to remain intact and, in fact clump, resulting in reduced availability and incorporation of nutrients and oxygen. The outcome is reduction in the numbers of active yeast that would otherwise be seen if the same weight of yeast were dispersed in warm water. It has been reported that hydration at 60°F may result in up to 50% to 60% cell death (Cone, 1992).

Physiologically, the effect of rehydration at cold versus warm temperatures seems to center on the integrity of the cell membrane. Low temperature rehydration slows the reactivation of the membrane to a point where essential cytoplasmic components escape before membrane function can be re-established. By comparison, activation at warm (40°C / 105°F) temperatures quickly establishes the membrane barrier and function before the leaching effect can occur.

When rehydration is carried out in water, yeasts should be transferred into juice/must within a 30-minute time frame. Longer hydration periods tend to reduce viability. To avoid potential problems in this regard and to minimize osmotic stress potentially resulting from rehydration in straight water or juice, some winemakers recommend rehydration in clean juice diluted with warm (105°F) water. Yeasts require a certain amount of oxygen for growth. Prolonged growth under semi-anaerobic conditions reduces the sterol content of the cell membrane, thereby making the yeast more sensitive to the inhibitory effects of alcohol.

In the final stages of active dried yeast manufacture, producers generally manipulate growth conditions such that, upon rehydration, yeast have sufficient sterols for four to five generations. Beyond this, budding diminishes important membrane components, resulting in stress and the potential for stuck fermentations.

Thus, yeast suppliers recommend oxygen incorporation into starter tanks during the process of expanding volumes. Cone (1987) pointed out that actively growing yeast starters take up oxygen rapidly and before must oxidation occurs. Since simple mechanical agitation or pumping over may not increase the oxygen concentration to levels needed, it is suggested that sterile compressed air be bubbled directly into the tank. This technique is also effectively used for starter tanks raised from yeasts held in culture. However, the use of pure oxygen should be avoided because of its toxicity to yeasts.

Actively growing yeast should not be transferred directly to chilled must. Cold shock may reduce the viable cell count by up to 60% and, in general, result in slow growth and increase the potential for problem fermentations. Further, sudden drops in temperature may result in hydrogen sulfide production.

Where fermentation at lower temperatures is needed, starters should be acclimated to growth at the lower temperature prior to inoculation. When this is not feasible, it has been suggested that the starter be pumped over the top of the tank without mixing.

Unlike yeast starters expanded from liquid cultures, the percent of budding cells, in the case of freshly rehydrated yeast, is usually around 2% to 3%, potentially representing a significant delay in visible fermentative activity upon inoculation into must or juice.

The budding cell number can be improved by transfer to an intermediate culture tank for 24 to 48 hours prior to inoculation. When the subsequent fermentation will be carried out at low (55°F) temperature, this has the added advantage of providing an acclimation phase. ■

References

Cone, C. 1987. Personal communication.
Cone, C. 1992. Personal communication.
Kraus, J.M., R. Scoop, and S.L. Chen. 1981. Effect of Rehydration on Dry Wine Yeast Activity. *Am. J. Enol. Vitic.* 32 (2): 132-35.
Shelton, C. 1992. Personal communication.

Successful preparation: malolactic bacteria

By Lisa Van de Water
The Wine Lab

After 18 years of preparing malolactic (ML) bacteria cultures to inoculate wines, we have concluded that the most important factors are: activity of the prepared ML bacteria culture; winery propagation; and absence of contamination.

The specific strain of *Leuconostoc* used, while it affects the resulting flavors, appears to be less important than the way the bacteria are grown up and expanded.

The culture must have a high percentage of viable cells present at the time of propagation. Most preparations, including freeze-dried, lose activity over time even when stored properly. Many preparations also vary greatly in activity from batch to batch.

No one can grow bacteria that are already dead or have poor viability. However, a winemaker who stirs a packet of bacteria into a tub of low-pH, nearly-dry wine at cellar temperature, waits a day or so, then throws it into the tank, will blame the culture when ML inoculation is unsuccessful. Thus, it is often the starter preparation procedure that is at fault, not the culture.

The way winemakers grow the bacteria is critical to the success of ML inoculation. Preparations which involve direct inoculation (no starter step) of juice or wine have experienced very mixed success. By far the most effective way of utilizing a *Leuconostoc* bacterial culture is to prepare an active starter from diluted grape juice.

Growing ML bacteria in **juice** is much better than in must that has been fermenting for several days, or a finished wine. This greatly increases the chance of fast propagation of the bacteria. If there is a significant alcohol level, acclimation proceeds much more slowly, often resulting in failure of the starter to grow quickly enough to be of any use.

Asked the 'key' to starter growth, one winemaker replied, "temperature, temperature, temperature." Unless the starter is kept very warm (at least 80°F to 90°F, but less than 100°F), it will not grow quickly enough to be useful for inoculation. Many good ML bacteria cultures are robbed of their effectiveness because the starter was kept at room temperature or colder. Once the bacteria have become acclimated to must in the first starter step, cooler temperatures (upper 60°F's, 70°F's) are usually tolerated.

Starter pH is also very important. If the pH is below 3.3, the starter will grow slowly or not at all. If it is above 3.5 to 3.6, the probability of growth of spoilage ML bacteria from the vineyard is greater. Starter pH can be adjusted upward with potassium or calcium carbonate, downward with tartaric acid.

Other encouraging factors for starters include addition of yeast extract (or a complex ML-nutrient containing yeast extract), and perhaps adding a little unfiltered apple juice. However, if the starter consists only of apple juice at high pH (3.8 to 4.0 and over), the likelihood of growth of contaminant bacteria increases.

Finally, checking the starter by chromatogram or enzymatic malic acid assay assures that ML fermentation is completed before it is added to a larger juice or must volume. Until ML-completion, the bacterial population is unlikely to be large enough to provide the necessary 10^6 cells/ml minimum in the final must volume.

Examining starters daily under a phase-contrast microscope ensures that the right bacteria have grown, instead of a contaminant vineyard microbe which could spoil the entire batch. A clean 'ready' culture would show medium length (5 to 10 cells or more) chains of small round cells like kinky necklaces, **or** shorter length in great numbers.

Thus, for a great ML start-up, maintain the best possible environment for *Leuconostoc* growth during the few days (1 to 3, under favorable conditions) it takes for the starter to grow to completion. Thus, pH of the starter is important, as are temperature, alcohol level, and nutrient pool available, all leading to a healthy population of optimum size. ■

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Technology in the wine industry is now concentrating on the application of biotechnology to improve the biochemical or physiological characteristics of the micro-organisms that are critical to the production of wine.

The next obvious stage in this drive for competitive improvement will involve the 'biocatalysts' or micro-organisms which carry out the primary and secondary fermentations of wine. The strains of yeast and malolactic bacteria employed in the wine production process can have a vital impact on wine quality and consistency.

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ing secondary fermentation even in stubborn cases of low pH and temperatures. They have also been pleased by the simplicity of the direct-inoculum treatment and the complexity that has been imparted to their wines.

MiTech now offers two new high-performance yeast products: the MI-8 and MI-16 strains. These yeasts are unique in their contribution to wine flavor and aroma. The MI-16 strain is also of particular specialized interest in that it is genetically defective in the pathways which lead to the production of hydrogen sulfide.

For more information, contact: **Pickering Winery Supply**, 1300 22nd St., San Francisco, CA 94107, tel: 415/821-2400, fax: 415/821-0811.

Please see ad, page 76.

Red Star Yeast

Red Star active-dry wine yeasts are grown on cane and beet molasses under highly aerobic conditions, assuring better survival toward the end of grape must fermentations. These yeasts are adapted to perform in normal levels of SO_2. The yeast is carefully dried in a fluid bed drier to assure high live cell counts and ease of rehydration.

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Universal Foods currently is under license to use Epernay®, Prise De Mousse®, Chanson®, and Pasteur Red® to market our strains of wine yeast. The names Epernay®, Prise De Mousse®, Chanson®, and Pasteur Red® are registered trademarks owned by Lisa Van de Water, The Wine Lab.

Red Star wine yeasts are available through the following distributors:

Cellulo Co.,
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tel: 707/255-6372
Presque Isle Wine Cellars,
North East, PA
tel: 814/725-1314
Vinquiry,
Healdsburg, CA tel: 707/433-8869
The Wine Lab,
Napa, CA tel: 707/224-7903

Scott Laboratories

Lallemand, supplier of specialty yeast strains for winemaking, has been producing fermentation products in dried form for two decades. Over 100 different wine yeast strains, various malolactic bacteria, and fermentation aids are offered.

The strains were researched by top enologists and at respected institutes around the world. Research continues on the isolation and selection of strains which will help compliment the winemaker's style.

From an organoleptic standpoint, the winemaker will have a greater selection of yeast strains to choose from, i.e. more varietal character or less — yeast ester production or neutral, etc. All of these choices become a benefit because different strains usually have different fermentation kinetics. Ultimately, whatever criteria a winemaker feels strongly about when they decide which yeast strain to use for which fermentation, there is a good chance that strain is already available or will be in the near future.

This same thinking applies in the search for better or easier to use malolactic bacteria cultures. Previous to the 1991 harvest, the ER1A and EY2B strains were only available in liquid form. In 1991, Lallemand offered these cultures in a dried or lyophilized form which makes ML inoculation easier and more cost-effective. Wineries that tried these cultures in 1991 were very positive about the results.

For more information, contact: **Scott Laboratories, Inc.,** 2220 Pine View Way, Petaluma, CA 94955-4559, tel: 707/765-6666, fax: 707/765-6674.
Please see ad, pages 48,57,59.

Vinquiry

In 1991, Vinquiry added the Enoferm line of specialty yeasts, giving winemakers new choices in active-dry yeast for premium wine production.

The Enoferm strains were selected from wine-producing regions around the world on the basis of favorable sensory contributions and fermentation characteristics. Production-lot and small-scale evaluations were conducted in California during the 1991 vintage which demonstrated their advantages under a range of winemaking conditions.

Seven Enoferm strains are available: Assmanshausen, Avize, Bordeaux Red, Burgundy, ICV D-47, M-2, Simi White (French White), and L-2226. Vinquiry continues to carry a wide range of other yeast, both as active-dry and specialty slant cultures.

Malolactic fermentation is also a priority at Vinquiry. Several selections of bacteria are available to assure timely completion of this fermentation. The MCW strain, which was isolated and developed by Vinquiry, is widely used. Its vigorous growth, pH tolerance, and beneficial sensory characteristics have made it the bacterial strain of choice for a variety of wine types. MCW is available as a liquid or freeze-dried culture.

To expand available choices for malolactic fermentation, Vinquiry recently introduced Vino brand freeze-dried bacteria. Vino is made up of two strains of Leuconostoc which are both pH- and cold-tolerant. ML-34, the classic UC-Davis isolate, is available as a liquid culture.

Several types of nutrients are available to support growth of both yeast and malolactic bacteria: DAP (diammonium phosphate), yeast autolysate, yeast extract, yeast hulls, Fermaid, Cerevit (B vitamins), and Oenovit (nutrients for ML starters).

Vinquiry staff can help match the winemaker's needs with appropriate yeast and malolactic bacteria choices and

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discuss proper handling of the cultures.

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The Wine Lab

The following yeast and malolactic bacteria are available from The Wine Lab:

Red Star dry yeasts in 5-g, 500-g, and 10-kg: Chanson, Epernay-2, Montrachet, Pasteur Champagne, Pasteur Red, Prise de Mousse.

Other dry yeasts in 500-g: Fermivin and Fermichamp from GB Fermentations. Call for other strains.

Liquid yeasts in 4-oz, 8-oz, 16-oz, 32-oz, and Yeaster Kit. A yeast collection is maintained that can be prepared as a liquid culture. Strains include: Beerenauslese, Enolevure, Etoile, Pasteur White, Steinberg, YC Zinfandel.

Malolactic bacteria (*Leuconostoc oenos*) active liquid cultures: combined ML strains (four popular strains) is recommended. Call for single strains and for New Zealand strains.

Fermentation aids

Superfood: Our state-of-the-art yeast supplement contains yeast hulls, DAP, yeast extracts, vitamins, and minerals. Superfood's unique combination of ingredients provides the complex supplementation that yeasts need, so each component must be at an effective dose level to achieve maximum power. For most musts, 4-lb/1,000G provides adequate complex nitrogen and yeast hull activity to help prevent sluggish fermentations and H_2S.

ML Nutrient: a rich combination of primary grown yeast extract (high in amino acids), vitamins, minerals, and bacterial growth factors.

Single ingredients are available: Yeast hulls (Red Star Nutrex 370), Yeastex-61, Red Star yeast extracts (Amberex and T-154), Pantothenic acid (calcium salt). Also Biopectinase 700-P dry pectic enzyme.

For more information, contact: **The Wine Lab**, 477 Walnut St., Napa, CA 94559, tel: 707/224-7903, fax: 707/255-2019. ■

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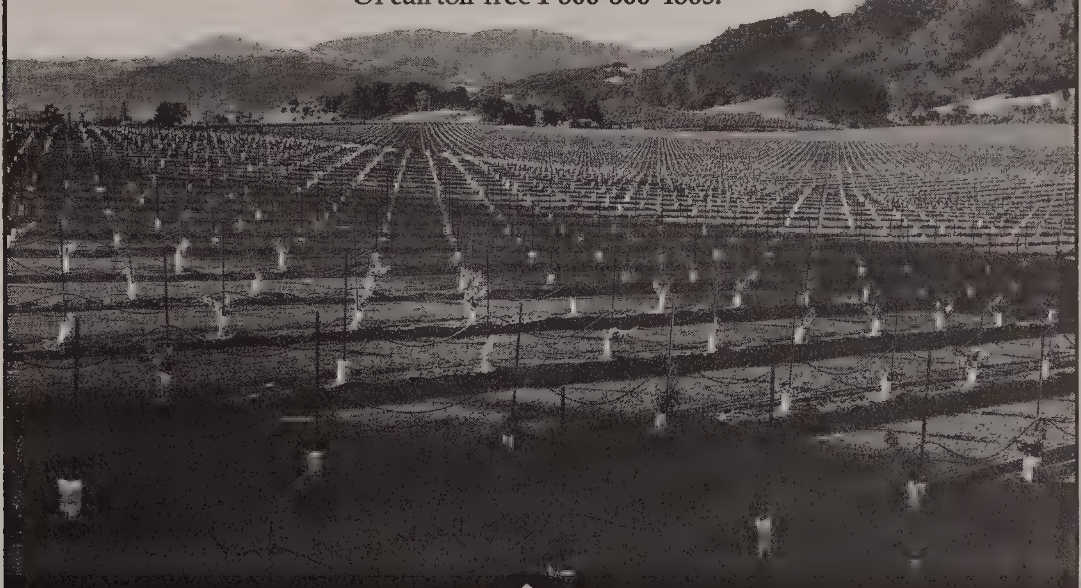

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Take a new look at farm credit

By Carol Caldwell-Ewart

Grape growers and winery owners in search of mortgage or commercial financing may want to take a new look at the farm credit system. The system reported net earnings of $811 million nationwide in 1991.

During the last eight years in Northern California, several farm credit associations, have merged into Pacific Coast Farm Credit Services (PCFC).

PCFC provides mortgage and commercial loans to farmers and farm service businesses in a 15-county, coastal area of California stretching from the Oregon border south through Monterey County, and includes most of California's premium wine-growing region. PCFC's headquarters are in Windsor (Sonoma County), with eight branch offices.

"We have put together a very strong financial institution," says Ron Carli, PCFC President and Chief Executive Officer. The most recent merger of North Coast Farm Credit and Pacific Coast Farm Credit Associations into PCFC has produced an asset base of $550 million. "It made us one of the most financially strong organizations in the farm credit system," he says.

"The good news for grape growers and winery owners is that greater strength means PCFC can deliver a wider range of services and products to borrowers and can make larger loans," Carli says. He would not disclose PCFC's lending limit, though there are loans as large as $7 million in-house. PCFC participates with other institutions to make still larger loans.

How farm credit functions

The farm credit system is a separate, stand-alone banking system, and follows regulations much different than other banking, savings and loan, or credit union systems. PCFC can loan only to borrowers from qualifying agricultural entities: full-time, part-time, or investment farmers, or on-farm services providers. The latter could be anything from a company that spreads fertilizer on vineyards, to a grape hauler.

Until late in 1991, farm credit associations could lend only to wineries that grew at least 20% of the grapes used in their wine production. Now, the regulations have been changed, and require that wineries grow only 'some' of the grapes they use. This change enables PCFC to qualify more wineries for financing.

PCFC is not allowed to loan to foreign farm owners, though they can loan to farmers with permanent residency status.

PCFC has a cooperative structure. Borrowers are required to invest in the co-op, based on a percentage of their loan.

"Even with the required investment, our effective rates are competitive with other lending institutions," Carli says.

How PCFC competes

PCFC competes for the farmer's business with all other commercial lending institutions, but Carli notes that PCFC offers borrowers some advantages. "Expertise is the greatest advantage PCFC can offer vineyard and winery borrowers. We know their business.

"PCFC makes mortgage loans over a longer pay-back period than most commercial banks do," says Terry Lindley, Vice President of Marketing. "We're willing to go out 20 to 30 years on a loan for vineyard real estate acquisition."

Carli expects a significant amount of vineyard redevelopment in Sonoma and Napa counties in coming years because of phylloxera. "We would like to have the opportunity to finance that redevelopment," he says.

"Today, we take a different look at new vineyard development," Carli says. "The vineyard must be planted in a known area with known varieties and rootstocks, and known vineyard people must be involved in the development."

A mortgage loan generally takes PCFC about 45 days to process, while commercial loans — working capital, vineyard redevelopment, or farm building construction, for example — require about 35 days.

PCFC recently has added an equipment leasing program to its services. "Customers can lease bottling lines, vehicles, and other equipment, sometimes without putting up any capital at all," Lindley says.

"Agriculture is our only business. We are a dependable source of funds, and our rates are very competitive," concludes Carli. ■

Complexities of sulfite use in wine

By Don Henfling

It is an ironic coincidence that winemakers have become more conservative in their use of SO_2 at the same time that the sulfite warning is appearing on wine labels. The changing role of sulfur dioxide in wine, the various equilibrium species present, and the decrease of free SO_2, (and to a lesser extent, the bound SO_2) in bottled wine are topics in this report.

Also included is an overview of the reaction of the sulfite-sensitive asthmatic person to sulfites found in model wine solutions, and the reaction to sulfites found in air and sulfite-preserved foods (now restricted).

Why SO_2 is used in wine

Sulfur dioxide, in the form of potassium metabisulfite, a 5% to 8% solution of the gas dissolved in water, or pure pressurized SO_2 gas injected and dissolved directly into the wine, is added to wine for the following reasons:

1) Molecular SO_2, at a concentration of 0.8 ppm, is considered to inhibit many spoilage microbes, including the aerobic *Acetobacter* which converts ethanol into acetic acid.

2) Browning enzymes, such as oxidative polyphenoloxidase (tyrosinase), are inhibited in the presence of SO_2.

3) Sulfur dioxide slowly acts as a chemical anti-oxidant. It reduces the compound it acts upon, and, in turn, is oxidized. Sulfur dioxide reacts with certain amino acids, phenolics, a-keto-acids, and some other cyclic compounds.

4) Once the bottled wine leaves the controlled temperature confines of the winery and enters the real world of marketing and distribution, exposure to heat will damage the wine less if thermally-induced reactions are slowed down by the protective presence of SO_2.

5) In the presence of oxygen, ethyl alcohol is oxidized into acetaldehyde. As a corrective action, one of the few options available to a winemaker is to add SO_2 which will bind with the acetaldehyde, and eliminate the smell.

Asthmatic reactions to SO_2

Sulfur dioxide and sulfites are inducers of bronchoconstriction when inhaled or ingested by certain persons with asthma. However, less than 4% of all asthmatics are sensitive to sulfite-induced asthma.[3] These sensitive persons are usually asthmatics taking steroids to alleviate their symptoms, and their sensitivity is measured as a bronchial constriction.

Sources of SO_2 for this asthmatic 'attack' are varied. Most sulfite research involves very sensitive patients, and involves sulfites in the air and in foods.

For example, the burning of sulfur-containing fuel is an oxidative reaction that converts elementary sulfur into SO_2. SO_2 combines with water in the atmosphere to produce acid rain, which contains sulfurous and sulfuric acids. The fatal London Fog of 1952 contained an estimated 1.5 ppm of SO_2 for a 24-hour period.[1]

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By comparison, Cal-OSHA regulations for all California industries permit a maximum of 2 ppm exposure to SO_2 for a time-weighted average of an 8-hour workshift. Federal-OSHA regulations also stipulate a short-term exposure limit of 5 ppm for a 15-minute time limit.

A few very sensitive individuals, perhaps lacking an adequate amount of the enzyme sulfite oxidase, develop an adverse reaction such as difficulty in breathing, after drinking a test solution containing as little as 5-mg/L of potassium metabisulfite.[3] Assuming there are no binding molecules in the test solution, this translates into 3-mg/L of free SO_2.

The lack of accompanying data on the concentration of free SO_2 and the pH of the wine (or test solutions) is a common omission in this type of research.

For instance, assuming the test solution is distilled water, it probably has a pH of 5.5. If the wine has 3.5 pH, then the wine is 100X more acidic than the water, and hence will contain 100X the molecular SO_2 if the free SO_2 is the same in the test solution as in the wine.

Assuming this, and that it is the molecular SO_2 that specifically causes an adverse reaction, then the **most** sensitive individual could only drink 10-ml of wine containing 3 ppm of free SO_2 before experiencing an adverse reaction. More research is needed on the active form of sulfite that elicits a reaction among sensitive asthmatics.

One research paper that did imply the correlation between pH and SO_2 activity in sensitive patients used an aerosol mist that contained sulfur dioxide in a spray with various specific pH values. The lower pH mist containing SO_2 provoked a greater adverse reaction among sulfite-sensitive subjects than the same aerosol formulated at higher pH.[4]

Salad bar lettuce, shrimp and avocados (guacamole), dried fruit, seafood, and wine are among those food products that have utilized the preserving effect of SO_2.

The reaction of sensitive asthmatics to sulfites in both foods and air was tested by duplicating the addition of commercially available sulfite mixtures to various food and wine models, and by having subjects breathe an aerosol mist containing various ppm additions of SO_2.

The results show that salad bars were a common source of sulfites in food; many studies have indicated that the 'salad freshener' is to blame. This 'salad freshener', now restricted, is made by dissolving 9 to 10 grams of the powder per liter of water. 90% of this powder is sodium bisulfite and 10% is a mix of buffering agents.[2]

Lettuce can contain high levels of sulfite when 'preserved' in this manner, such as on a salad bar, where it **was** used to keep lettuce green and fresh. One study indicated that a test serving of lettuce retained 10-mL of solution containing an estimated 100 mg of sodium bisulfite. This equals 2,500 ppm of total SO_2.

This same study then had the patients add salad dressing of their choice to the lettuce.[2] Although the study didn't detail the type of dressing, if it was an oil and vinegar that reduced the pH considerably, the amount of the more volatile molecular SO_2 would be increased.

Research has also been done on other foods treated with sulfites, including wine. One study substituted white grape juice for wine, because subjects with asthma report a history of adverse reactions to wine, and these reactions may not be attributable solely to sulfite content. For persons who are more sensitive to red wine than white wine, it would seem that some tannin-related compound is the cause of the reaction, and histamine would be a logical choice.

In this study, the grape juice contained 220 to 260 ppm of total SO_2 from potassium metabisulfite, and the subjects consumed from 100 to 500-ml of grape juice as a provoking dose.[3] No mention was made of the free SO_2 in the resulting juice, and no pH measurements were given. It should be noted once again, that this study did not take into account the pH of the solution compared to the wine, which will affect the equilibrium between the molecular SO_2 and the bisulfite ion.

Changes in SO_2 additions

Adding 50 to 100 ppm of SO_2 to grapes at the crusher was once a common practice, with subsequent additions after every racking to maintain a free SO_2 level of about 25 ppm. A final addition before bottling brought the free SO_2 back up to about 25 ppm.

Recently, many winemakers have changed their strategy relative to protecting wine with SO_2. With emphasis on efficient grapegrowing and timely harvesting practices, crush begins with grapes showing little sign of mold, mildew, or unwanted wild yeast activity. The grapes are either picked cool or quickly chilled to prevent spontaneous microbial activity, and oxidative browning or degradation.

Because of the good condition of the grapes, and because winemakers often feel that the action of enzymes such as polyphenoloxidase actually can improve the quality of the resulting wine, SO_2 additions often are now made later in the winemaking process.

Although many wineries still add SO_2 at the crusher, there are wineries making the first SO_2 addition only **after** the primary fermentation is completed. However, for wines inoculated with malolactic (ML) bacteria, SO_2 is not added until this bacterial fermentation is completed. Although there are many factors affecting the growth of malolactic (ML) bacteria, the absence of SO_2 is a major factor that will facilitate their growth.

It is a dilemma to deal with a wine that will not complete ML, for even low concentrations of SO_2 will inhibit these bacteria (even if SO_2 is bound). Therefore it is advisable to eliminate or minimize SO_2 additions to grapes destined to be ML+ wines.

Although the 6-carbon sugars have a marginal propensity to bind with bisulfite, many of the intermediary metabolic products of yeast metabolism have a greater proclivity for binding with available sulfites. These molecules include acetaldehyde and pyruvate.

Therefore, if SO_2 isn't added until the yeast fermentation is complete, then the concentration of these intermediary products has proceeded towards the complete oxidation products of ethanol, water, and CO_2, and there is less with which the SO_2 can bind. Certainly, acetaldehyde from chemical oxidation, occurring after the fermentation process, is a whole different story.

When SO_2 is first added to a wine after the primary and malolactic fermentations are completed, it is common for about 50-75% of the total SO_2 to be in the free SO_2 form because it takes time to bind up sulfites in complexes described above.

Winemakers are discovering that their wines develop (age) more quickly when they contain less SO_2, and are therefore ready for bottling and market sooner. This may be because SO_2 slows both beneficial and harmful oxidative reactions.

Careful cellar practices give the wine more protection from exposure to air, thus thwarting the growth of aerobic *Acetobacter* without depending completely on SO_2.

For example, the use of silicone bungs rather than tapered wood bungs greatly increases the sealing capability of wine barrels, thus minimizing oxygen seepage (as well as contamination by wooden bungs). In addition, stainless steel tanks are designed for minimum surface area interface between wine and headspace in order to minimize oxidation.

Winemakers realize that wine doesn't require constant additions of SO_2 if oxygen is kept away from the wine. Wineries which do several rackings should monitor the volatile acidity (VA) levels monthly. An increasing VA level indicates a wine that warrants more protective free SO_2 and the elimination of oxygen by blanketing the headspace to <1% O_2 using an inert gas such as nitrogen, CO_2, or argon. These measures should inhibit the microbial activity and slow or stop the further increase of VA. If these measures are unsuccessful, then filtering out the offending microbes from the wine is the remaining remedy.

pH dependency of molecular SO_2

When considering the amount of SO_2 to add to the wine, it should be remembered that less SO_2 is needed at lower pH values for two reasons:

1) Most organisms find a low pH environment hostile.

2) Free SO_2 is mostly not available as molecular sulfur dioxide, but instead exists in solution as bisulfite ion and dissolved SO_2 in an equilibrium that is pH-dependent.

$$SO_2\,(aq) + H_2O \rightleftharpoons H^+ + HSO_3^-$$

A lower pH will shift the equilibrium to the left and provide more molecular SO_2, the form that is most useful in winemaking and most harmful to asthmatics. Some winemakers don't take pH into account when making SO_2 additions. They aim for a general value that they assume will give protection. For example, SO_2 is added, until the free SO_2 is 20 to 25 ppm, regardless of the pH of the wine.

For every 0.3 unit decrease in the pH, the hydrogen ion concentration doubles. Therefore, a wine with 3.3 pH will contain twice the molecular SO_2 and hence twice the protection compared to a wine with 3.6 pH, assuming they both contain the same amount of free SO_2.

A wine with 3.3 pH will contain 4X more molecular SO_2 than a wine with 3.9 pH, assuming they contain the same free SO_2. Another way of looking at it is that a wine with 3.9 pH will require 4X more free SO_2 to achieve the same molecular SO_2 level as a wine with 3.3 pH.

At the pH of most red and white wines, over 95% of the free SO_2 exists in the benign

Continued on page 43

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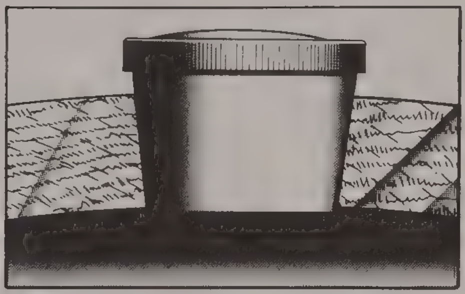

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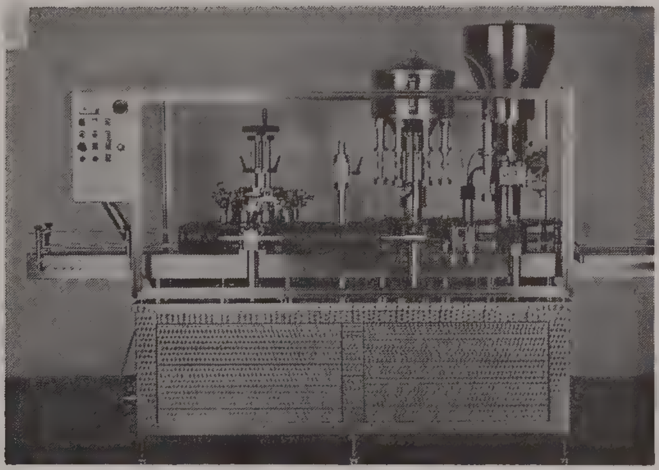

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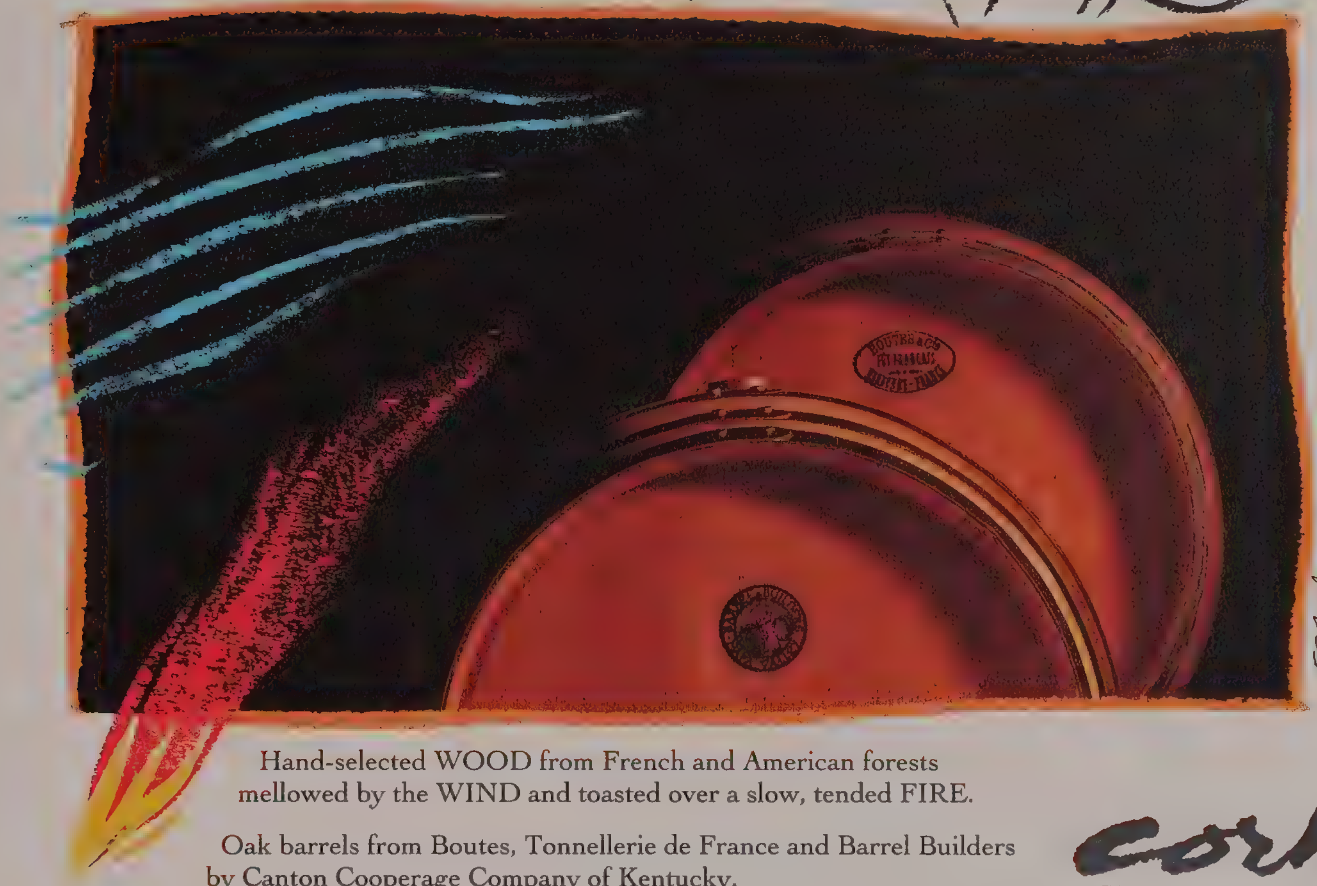

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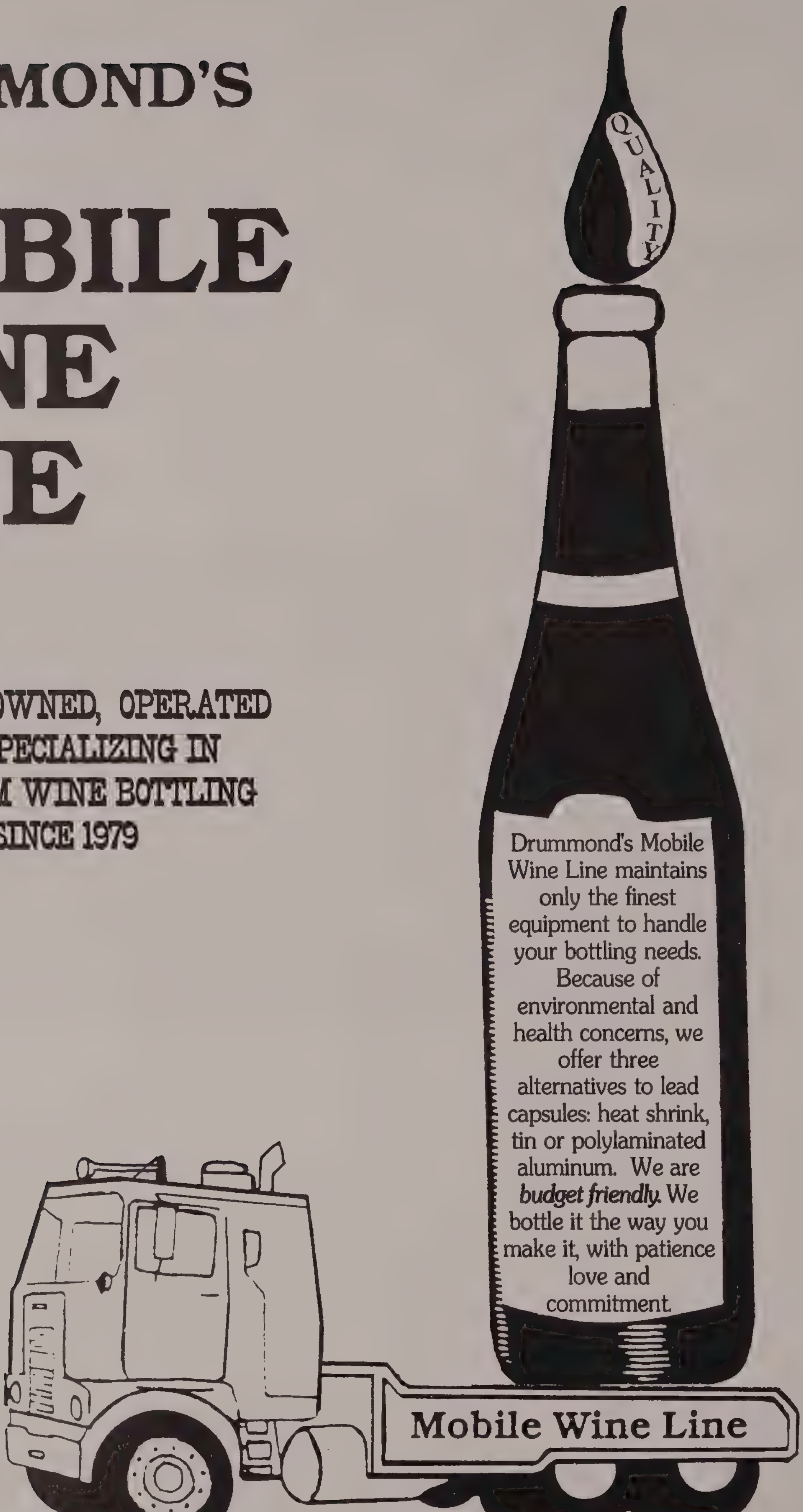

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Continued from page 39

bisulfite form. This means that in an aged wine where the free SO_2 has dropped to a value of 1 to 5 ppm, the active dissolved molecular sulfur dioxide in the wine will be 0.05 to 0.25 ppm.

Protecting bottled wine

Once a wine is bottled, it is a closed system. Still, even bottled wine ages, which is a romantic way of saying that chemical changes occur. Some molecules will be oxidized continually while others will be reduced. Tannins will polymerize, changing wine color and astringency, and the esters formed during fermentation will decompose into their corresponding alcohols and organic acids.

Table 1 DECREASES IN SO_2 IN BOTTLED WINE

		TESTED AT BOTTLING			TESTED OCTOBER 1989			
VINTAGE/WINE	BOTTLING DATE	T_2	F_1	B_3	T_2	F_1	B_3	pH
1974 Zinfandel	2/77	110	23	87	52	0.5	51	3.30
1975 Zinfandel	8/78	110	25	85	54	1.5	52	3.60
1977 Petite Syrah	4/80	98	27	71	46	2.0	44	3.60
1984 Reserve CS	6/87	80	19	61	66	7.0	59	3.56
1987 Reserve PN	8/88	39	14	25	33	8.0	25	3.68

F_1 above tests on free SO_2 were done using vacuum aspiration system = F
T_2 above tests on total SO_2 were done using potentiometric ripper = T
B_3 (by subtraction) bound SO_2 = B (values for free, bound, total SO_2 are expressed as ppm or mg/L)

SO_2 is included in this mixture of chemicals. The question is: What preservative role does SO_2 serve in bottled wine?

Modern bottling equipment allows as little as 0.1 ppm of dissolved oxygen into the wine, which does not allow much chance for an aerobic organism to thrive, even without the inhibiting effect of SO_2.

On the other hand, anaerobic bacteria and yeast pose problems, since they can function in the closed environs of the bottled wine. Indeed, *Brettanomyces*, the non-sporulating form of the yeast *Dekkera*, presents a challenging problem to winemakers. The growth of this wild yeast in the bottled wine imparts a distinctive aroma often associated with barnyards, sweaty horses, and wet dogs.

With any of these problems, dependence on SO_2 in bottled wine is futile. SO_2 will only provide protection over the short-term. Since most wine is consumed shortly after it is bottled and released, the SO_2 serves this function. However, with time, the levels of SO_2 can drop to the point where the protection provided is insufficient.

The ultimate cure against any wine microbe problem is sterile filtration to remove all bacteria and yeast. Wineries that sterile filter their wines don't need to rely exclusively on SO_2, since there is no yeast or bacteria left in the wine.

Any wine that contains residual sugar and is bottled without benefit of sterile filtration must depend upon sulfur dioxide and potassium sorbate to inhibit the growth of yeast.

Any wine that contains malic acid and is bottled without benefit of sterile filtration must depend upon sulfur dioxide and the hostile environment of a low pH alcoholic solution to thwart malolactic bacteria. This situation just doesn't afford the absolute protection gained by filtering all microbes out of the wine.

Decreased sulfites in bottled wine

The following tests were done on bottled wine produced by a major Napa Valley winery (Table 1). Each wine contains typical SO_2 levels for the vintage. Note that the concentration of total SO_2 at bottling in their wines has decreased in recent vintages.

For instance, in the 14 months since the 1987 Reserve Pinot Noir was bottled, the free SO_2 dropped 6 ppm, but the bound SO_2 remained constant at 25 ppm. Remember that total SO_2 = bound SO_2 + free SO_2.

Table 2 MORE SO_2 DECREASES IN BOTTLED WINE

	SO_2 AT BOTTLING		SO_2 AFTER BOTTLING			
VINTAGE/WINE	F	T	F	T	TIME AFTER BOTTLING	pH
1988 Chardonnay	32	78	15	60	1 year	3.34
1989 Sauvignon Blanc	26	72	17	61	4 months	2.89

F= Free SO_2 T=Total SO_2

For purposes of protecting the wine, bound SO_2 is not considered functional. Some of the bound SO_2 can slowly unbind as determined by pH and the SO_2 equilibrium, as well as the oxidative state of the wine. In the 12+ years since the 1974 Zinfandel was bottled, the bound SO_2 dropped from 87 ppm to 51 ppm. Therefore, although the level of free SO_2 drops through oxidative reactions, some free SO_2 is being slowly generated from bound SO_2.

Results from another Napa Valley winery (Table 2) are similar.

High temperatures and SO_2

The disappearance of SO_2 is also a function of wine temperature: SO_2 is utilized much faster at higher temperatures. In wine held at a temperature of 47°C (117°F), the average loss of free SO_2 from bottled red wine (3.1 pH) was approximately 2.5 ppm/day. The loss from bottled white wine (3.4 pH) held at the same temperature was less, but still significant at 1.0 ppm/day.[5]

These temperature conditions are extreme, but quite possible for wine that is being transported to distant markets in non-refrigerated containers. In high temperature conditions, the SO_2 protects not only the flavor of the wine, but dramatically preserves the color properties.

Wine is often exposed to high temperature during distribution and sales. Consider that 22 containers shipped by a large wine importer from Europe to California via the Panama Canal in 1988 were not refrigerated. The trip from Europe to California takes 24 days. Consider that only two of 12 importers whose practices were examined consistently used temperature-controlled containers.[6]

Certainly, commercial wine needs protection given the uncertainty of this type of distribution system. It needs enough SO_2 to give it protection until it is consumed or cellared, but not so much that it has a negative impact on sensory qualities or health.

Total SO_2 values of 40 to 60 ppm in newly bottled wine do not provide a large pool of bound SO_2 from which to draw as the free SO_2 is utilized. It is a remote possibility that, by the time a well-aged premium wine is consumed, the total SO_2 could be below 10 ppm. The free SO_2 could dip below 1 ppm, and it is the free SO_2 that is indicative of the activity of the sulfur dioxide and the hazard to asthmatics.

Conclusion

Many winemakers are making fewer and smaller SO_2 additions during the winemaking process as they determine how best to protect the wine without compromising quality. Factors such as better quality grapes, silicone bungs, stainless steel tanks, regular topping regimes, the use of inert gases, and sterile filtration give winemakers options in protecting their wine without a singular reliance on SO_2.

As a consequence, although most winemakers depend upon the protective action from appropriate concentrations of free SO_2 in their wines, these wines often contain a smaller total SO_2 than in the past.

The timing and amount of SO_2 that winemakers add to their wines is a complex decision based on the quality of the grapes, whether the wine will undergo malolactic fermentation, and how much unwanted microbial activity needs to be thwarted.

Sulfite additions also depend upon how much of the SO_2 binds and how much of the remaining free SO_2 is, because of the pH, available as molecular SO_2.

Levels of SO_2 at bottling must anticipate a marketing distribution system that is often uncertain as to temperature control. SO_2 is really the only option available to impede thermally-induced reactions in bottled wine.

Data included in this report suggests that free SO_2 decreases substantially after a wine is bottled, and that the levels of free and total SO_2 may have decreased below the levels that affect sulfite-sensitive individuals.

A few commercial California wineries believe it is possible to make and distribute sound, commercial wine without the addition of any sulfites. These wineries are marketing wines with no added SO_2, and hence no sulfite warning label.

Whether these wineries are filling a niche in the marketplace for organic-style wines, or whether these wines will be recognized as a quality product able to compete with those wines using SO_2 remains to be seen.

Government restrictions have severely limited the use of sulfites in preserving food products. Although no restrictions are anticipated regarding the use of SO_2 in the winemaking process, research concerning the effects of sensitive individuals to sulfites in wine should be specific and thorough. The model test solutions should simulate wine and those levels of sulfites typical of commercial wines, and data should include pH, and free and total SO_2 concentrations. Appropriate controls should be included in the testing procedure so that sulfites, and not other naturally occurring wine compounds such as tannins or alcohol, are the component being tested. ■

References

1. Logan, *Lancet*, 1953, pp. 336-9.

2. William C. Howland III and Ronald A. Simon MD, Sulfite-treated lettuce challenges in sulfite-sensitive subjects with asthma, ***J. Allergy Clin. Immunol.***, June 1989, 83(6), pp. 1079-82.

3. Taylor, S.L., Sensitivity to sulfited-foods for sensitive asthmatics, ***J. Allergy Clin. Immunol.***, June 1988, 81(6), pp. 1159-67.

4. Fine J., Gordon T. and Sheppard D., The roles of pH and ionic species in sulfur dioxide- and sulfite-induced brochoconstriction, ***Am. Rev. Respir. Dis.***, 136(5), Nov. 1987, pp. 1122-6.

5. Ough, C.S., Some effects of temperature and SO_2 on wine during simulated transport or storage. ***Am. J. Enol. Vitic.*** 36: 18-22 (1985).

6. Mansson, P., Top U.S. importers avoid safest shipping, ***The Wine Spectator***, July 31, 1989, pp. 8-9.

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What makes a winery newsletter work?

By Janet Fletcher & Terry McGrath

This report, Part II of a two-part series on winery newsletters, focuses on newsletter design.

What part of your daily newspaper is the hardest to read? Next time you open the financial section to check the price of your GM stock, notice the graphics: page after bland page of tiny gray type, with few headlines and almost no white space. Stock quotes, bond yields, foreign exchange rates — they're all there in row upon row of minuscule numbers that tire the eyes. If the front page looked like that, you'd never read it.

Readers accept these unfriendly graphics on the financial markets page because the information has value. Major dollars ride on minor upticks and downticks. Readers are motivated.

If you are a stock market wizard offering hot investment tips, you can print your newsletter on used grocery bags and subscribers will read it. But winery newsletters don't offer the same potential for financial rewards. You, the winery newsletter publisher, must design a publication that will seduce people to read. Understanding the principles of good graphic design and how to make it work for you will boost the effectiveness of your customer newsletter and other communications.

Exploit design's power

Good design provides the link between your message and your audience. It piques curiosity. It pleases the senses of sight and touch. In a highly competitive selling environment, it commands attention. In sum, it makes readers want to read.

Good design organizes information for the reader and emphasizes the high-lights. It directs the eye to read in the right orderand connects illustrations to stories. It creates a hierarchy of elements, so that readers understand what's most important.

The design of your customer newsletter should also reflect your winery's style and image. Are your wines slightly offbeat or strictly traditional? Is your winery down-home or high-style? Is your audience high-end or mass-market? Your newsletter should clarify your image, not confuse it.

Look at the successful corporate image-makers, like Apple and IBM. Each has devised a unique graphic style and stuck with it. Apple uses the same typeface in most of its printed materials; IBM and BMW do, too. These companies know that a consistent graphic look reinforces their image.

Know it when you see it

To recognize good graphic design, consider some of the decisions you or your designer must make on a newsletter project. Which of the thousands of paper stocks, ink colors, and typefaces will you choose? Where will you get photographs and other artwork? How will you organize and lay out the material?

Designers choose type carefully. A typeface must be readable, of course, but it also should have a personality that fits your

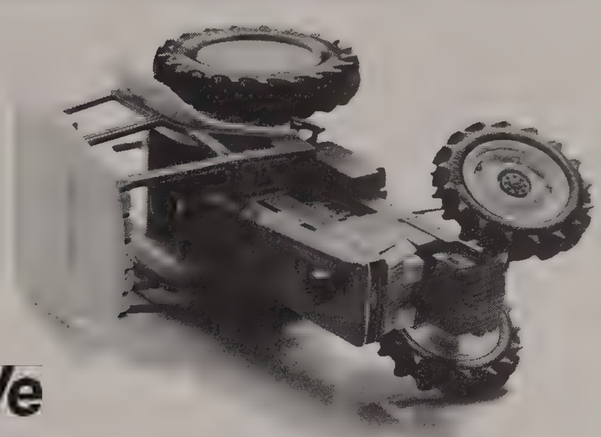

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image. Some typefaces evoke warm and fuzzy feelings, others seem almost militaristic. Type can be elegant, stylish, contemporary, traditional, dignified, or informal. An appropriate typeface supports your main message.

Photographs and artwork should enhance or illuminate your text. One good strong image is far better than a lot of weak ones, but good photographs rarely just happen; they must be planned. Strategize your photographs as carefully as you do your text. As you assemble a newsletter story, imagine the perfect accompanying photograph.

Memorable images capture action or emotion. Often they grab our eye because of an unexpected element — an unusual angle, perhaps, or a strange juxtaposition. For variety, plan for both vertical and horizontal images; some big, some small. Crop photos aggressively, if necessary, for maximum impact.

Visually enticing newsletter pages have strong value differences — contrasts between light and dark that designers achieve through creative use of type, screens, reverses, borders, and white space. Study some of the newsletters you receive; if they don't entice you to read, chances are the designers have failed to use value differences effectively. The pages look gray and bland when they should be lively, appealing, and visually stimulating.

Do you need a designer?

Using modern desktop publishing systems, many businesses have the ability to generate a newsletter in-house. If you have a computer-savvy person on staff with design skills or a willingness to learn some, you may not need an outside designer. Professional help isn't for everyone. You may have reservations about an outsider's ability to understand your business, or you may simply decide you can't afford help.

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On the other hand, designers offer you the benefit of their professional network; they should know where to get the best work at the best price for each type of printing job. Sometimes they can save you money by pooling their jobs to buy type, paper, or printing; or they can negotiate better prices than you can because they bring the vendor a lot of work. Because they know how various printers fit a job on the press, they can often suggest small format changes that produce savings.

If you decide to do it yourself, you should know how to judge the materials you produce. Examine them critically. Could they be more readable, more inviting? With a good book on desktop design or some classroom instruction, you can master some of the techniques of graphics professionals.

Studying what the pros do can give you ideas. It can also teach you what not to do, because even professionals sometimes miss the boat. You've seen those trendy magazines with headlines running at angles or lots of tiny white type on dark backgrounds, impossible to read.

A lot of contemporary design is visually exciting — it grabs you, but it doesn't hold you. Look around and you'll notice plenty of examples of professional design run amok. Bright colors on bright backgrounds may draw the eye but they tire it fast. Strive to communicate, not to dazzle.

If you need design help

The obvious first step in hiring a designer is to examine his or her past work. You want to see finished projects that appeal to you. Don't automatically reject a designer whose portfolio doesn't include a piece like the one you have in mind. You probably won't find 'your piece;' and if the designer ***has*** done a piece just like yours, you should get something different. You are paying for a unique image.

It's important to feel comfortable with the designer you choose. Ideally, you will establish a long-term relationship so that the person who creates your graphic image can help carry it through other projects.

Designers typically organize a newsletter project by phases. If you don't click personally, or if you decide the designer doesn't have a feel for your project, you can terminate the arrangement with minimal expenditure. At each phase, you should be clear about your expectations and the designer should be clear about what you will receive.

Make yourself heard

A strong message and a strategic design make for powerful communication. On the other hand, poor design cripples a lot of marketing materials, particularly newsletters. With so much competition for their attention, consumers don't bother with weak presentations. Consider how much of your own mail you toss straight in the trash or set aside for that mythical day when you'll have more time.

Don't let that happen to your own publications. You can invest a lot in writing, printing, and mailing a newsletter, but if weak design makes readers put it at the bottom of their 'to read' file, you have failed to communicate. ■

Writer, Janet Fletcher (Oakland, CA) and designer, Terry McGrath (San Rafael, CA) collaborate on promotional materials for food and wine clients.

Cellular phones essential to wine industry management

By Carol Caldwell-Ewart

During the 1990 harvest, a hailstorm knocked all the leaves off 342 acres of grapevines at the Hess Vineyard in Soledad, CA, and the rush began to get the grapes picked.

"I was in my pickup for seven days and on my cellular telephone about 20 hours/day," says former Hess vineyard manager Richard Boer. The picking crews harvested 921 tons of grapes in one week — a job that normally would take more than three weeks. "We had machines harvesting at night and hand-pick crews during the day," he says.

That harvest produced an excellent Hess Select California Chardonnay. "My cellular phone played a big role in saving the crop," Boer says. While he was in the vineyard, Boer was in constant contact with The Hess Vineyards' winemaker, who was 200 miles away, supervising grape processing in Napa County.

During that time, Boer and the winemaker discussed the condition of the Soledad vineyard, which grapes to pick first, and which to harvest by hand. Whenever a truckload of grapes left Soledad for the winery, Boer called the winemaker to have a crew standing by four hours later when the grapes arrived. "Our cellular phones allowed us to coordinate getting the fruit to the tank in the shortest time possible," Boer says.

Daniel Baron

A relatively recent convert to cellular technology, Boer says, "I can manage more acres because having the phone enables me to manage more efficiently."

At Hess, Boer's portable cellular phone could be moved from one truck to another when necessary. Twice a month, he drove from Hess Collection Winery in Napa to Soledad to oversee the vineyards there, and his cellular phone helped him make the eight-hour round trip productive.

"Cellular technology is a boon to the wine industry, particularly during harvest when instant communication is vital," says Paul Taylor, general manager for Cellular One in Sonoma, Napa, Solano, and Monterey counties. Cellular One, a national provider of cellular services, finds that agriculture is among the six top industries making the most use of cellular technology. "As cellular telephones become more convenient and less expensive, more vineyard managers and winemakers are using cellular phones to make the time on the road pay dividends," Taylor says.

"Many wineries and vineyard managers have cellular phones," Dirk Hampson agrees, winemaker at Far Niente Winery in Oakville, Napa County. "With a cellular phone, I can get more work done in one day with fewer mistakes."

Before cellular technology, Hampson says he would be out in the vineyard to see that the grapes were picked correctly and to decide when each field should be picked. He'd have to go back to the winery to find out sugar, acid, and pH test results, and then return to the vineyard to move crews to different fields to

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be sure he was picking the right grapes at the right time.

Today, Hampson picks up his car phone, calls the winery and gets the test results without leaving the vineyard. "It's more productive, more efficient," he says.

Bruce Streblow is a one-man band at the small, family-operated Streblow Vineyards in St. Helena, CA. Besides his own 25 acres, Streblow custom-farms another 16 acres, and during harvest, he hauls grapes for other vineyard owners. A cellular phone means "people can find me," he says.

Daniel Baron, general manager at John Daniel Society in Yountville, CA, says cellular phones are invaluable. His cellular service recently added voice mail, which takes a recorded message when the user is out of the car or has the phone turned off.

"It makes harvest smoother," Baron says. "We're not as dependent on office staff. In the past, many late-afternoon decisions would sit on the office answering machine and not get dealt with. Because voice mail is with me at all times, it adds greatly to our efficiency."

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Baron's cellular phone has a horn-alert feature. The car horn is wired to the cellular phone, and the first four rings beep the horn so it can be heard across the vineyard. "I found out how spoiled I am," Baron says, "when the foreman's truck (with its cellular phone) was in the shop, and I had to go out into the vineyard to find him."

Cellular technology is replacing mobile radios for vineyard and winery use. "Shortwave radios require licenses," Baron says, "and you can't communicate with the rest of the world."

At Hess Vineyards, crew members still use two-way radios to communicate with each other in the fields. The equipment is already in place, and the mobile radio can accommodate their needs over short distances.

"It's cheaper to operate," says Boer, but when he was not with the Hess crews, he had to relay messages by calling his office to have someone there to radio the crew with instructions. "When I had an important message, I had the office ask them to go to a phone and call me," he says.

"Cellular phones provide simple, direct access to anyone, anywhere there's a telephone, nationally or internationally," says Taylor. Mobile radio equipment is more expensive to buy, though the service itself is less expensive, and mobile radios don't offer such features as horn alert, call forwarding, or message recording.

Cellular phones may not rank with oak barrels on the list of winemaking tools, but do offer winery personnel instant communication for increased efficiency and productivity. ■

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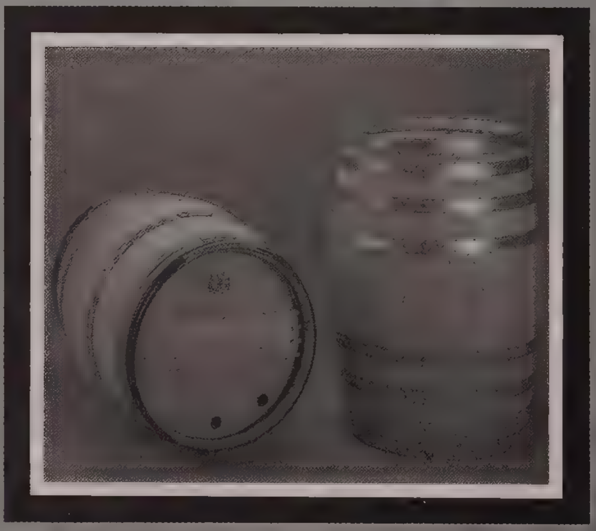

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Good food enhances consumer image of non-vinifera wine

By Doug Frost

In the April, 1991 issue of a British wine magazine, ***Decanter***, Jean Delmas of Château Haut Brion stated that non-vinifera and hybrid wines are poisonous. Obviously, this didn't sit well in England, a wine-producing country almost completely dependent upon hybrid wines as well as crossings of vinifera and non-vinifera grapes.

Aside from the usual French chauvinism, this bizarre disregard for non-vinifera wines is, to a real but lesser degree, shared by most avid American wine drinkers. Nowhere is this more obvious than in fine restaurants in American cities, where the only non-vinifera wine a customer will stumble across, on rare occasion, is some local oddity, perhaps the product of a friend of the owner's.

Any experienced wine marketer knows that brands are built in restaurants. Until non-vinifera wine producers commit to this battlefield, they will be consigned to the quiet corners of retail stores, which often stack the newest and most esoteric southern French or Italian offering in the front of the store.

Missouri's efforts

The Midwest Regional Grape and Wine Conference, the annual convention of the Missouri Grape & Wine Program, for the past two years has featured elaborate banquets pairing haute cuisine and Missouri wines. In 1991, the menu was designed by Steve Thomson, a wholesaler, and Dave Cross, executive chef of the Adam's Mark Hotel in Kansas City, MO.

"The idea was to elevate the Missouri winemakers' perceptions of their own wines," Thomson says. "We presented the wines in the best match-ups with the best food we could put together."

The menu began with smoked Missouri trout with shittake mushrooms and red onions, matched with a Stone Hill barrel-fermented Seyval Blanc. The acidity of the young Seyval fought back against the fattiness of the mushrooms, the earthiness of the onions (which also are sweet and were made richer by the veal stock in which they were sauteed), and the wine had enough fruit to handle the smoked flavors of the trout.

The second course was a gamebird salad with spinach, mushrooms, and paw paw vinaigrette, paired with Hermanhoff Seyval Blanc (no oak contact). "This wine was fruitier and still tight," Thomson says.

The entreé, smoked Missouri pork loin with sliced apples, pecans, and a cider sauce, was matched with St. James Seyval Blanc, a semi-dry wine whose sweetness was trimmed by the entree's smokiness and tart apples. Lastly, an Ozark trifle of berries and cream complemented Blumenhof's Dessertwein, a late-harvest Vignoles.

The banquet presentation during the 1992 Midwest Regional Grape and Wine Conference was a bigger undertaking. Missouri Grape & Wine Program director, Jim Ashby, assembled a team of Kansas City chefs, wine stewards, and wholesalers to survey Missouri's best recent bottlings.

The team sampled 10 wine candidates, paired with food, during a series of tastings at the American Restaurant. The goal was to produce excellent foods, an exciting dinner, to highlight excellent wines, and to place them in a match-up that improved the wines' character.

A harmonic menu

The resultant menu was prepared for 262 people by Adam's Mark chef Dave Cross and chef Bill Underwood and his staff at the Marriott Tan-Tar-A resort in central Missouri. Some advance food preparation was done by chef Rex Hale of the American Restaurant in Kansas City, MO.

The menu's first course, seared catfish, with orange and papaya puree with basil oil, was paired with Hermanhoff Vidal Blanc 1990. This full wine was a trifle

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sweet, with bright flavors (oranges, pear, strawberry) and a crisp finish. A wine this light normally would only handle lighter fish and shellfish, but its good acid deserved some fat. The papaya suppressed the earthy part of the catfish, the orange locked in the wine, and basil was added to fill a missing note in the finish of the wine.

The second dish, crawfish ragout, featured a big red crawfish, its tail fresh and sweet, between two chevre dumplings. The cream-puff-like dumplings and crawfish were surrounded by tiny shrimp in a bisque-like sauce filled with the rich and almost nutty flavor of shells. The dish was matched with Montelle Seyval blanc, (no oak contact), full of fruit with intense acidity; it hammered through the butter, sweet cheese, and shellfish.

A sweet (3.5% R.S.) Blumenhof Cayuga wasn't substantial enough for dessert, so a sorbet was made from it for intermezzo —with lemon zest and cream and enough juice to help it freeze.

Rabbit soup, the fourth course, contained chunks of rich rabbit meat to balance the acidity of the Henrichshaus Cynthiana, which was very impressive but with a short finish. Herbs, carrots, and turnips in the broth built up the back side of the palate, disguising the wine's missing element. The wine was chosen because of its brilliant nose.

The Stone Hill 1988 Norton, (picked ripe and aged in new oak) was easier. It's rich as hell, very straight-forward, and a pleasure. An Italianate dish of braised leg of lamb with whole toasted garlic cloves and some pretty black-eyed peas was prepared in a light reduction sauce, powered with flavor. The combination of rich comfort food and fat New World fruit created a competition for richness between the wine and food.

Dessert consisted of pears and chunks of fennel under a flan. The St. James 1990 semi-sweet Vignoles was delicious, with pears, strawberry, and apricot, a muscat-y note, and hay and anise. The dessert echoed all those notes, while the Vignoles was just sweet enough to overcome the custard.

The feast ended with a cheese plate accompanied by Mount Pleasant Port. It had all the charm of a California late-harvest Zinfandel, and its chocolate and fruit flavors made it great. The cheese plate was quite varied, like the flavors in the wine.

The event was, in part, an attempt to convince attendees that great food and wine matches are as exciting as great food or great wine alone. But it also proved that these wines should be taken seriously. Even though winemakers are just beginning to understand how to treat Norton and Vignoles, and how and when to oak Seyval and Vidal Blanc, these wines are worthy competitors to vinifera wines.

Although we really don't need to prove our wine are not poisonous, we need to brag about the last few years' achievements!

It's imperative for anyone interested in marketing non-vinifera wines to place these wines in the best possible context. Contact a talented local chef and sommelier to design menus to accompany your wines. Marrying good food with your good wine will help change consumer misconceptions that these wines are inferior to vinifera wines. ■

Doug Frost is a wholesaler (Griesedieck Imports) and Master Sommelier in the Kansas City, MO area.

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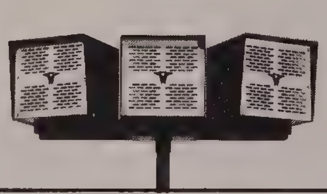

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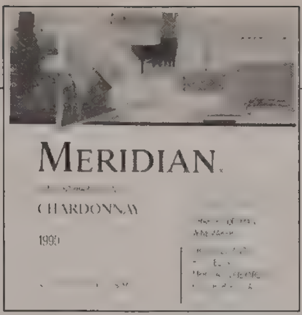


Evolution of a Chardonnay winemaker

By Scott Clemens

Though most California winemakers make a whole line of red and white table wines, only a few seem destined to be known for a particular varietal. Andre Tchelistcheff, for example, always will be remembered for the classic Cabernet Sauvignons he made at Beaulieu Vineyard in Rutherford, CA. Likewise, Chuck Ortman has made a name for himself by producing consistently outstanding Chardonnay, in addition to his other varietal accomplishments.

From Ortman's early days (mid-1970s) at Spring Mountain Vineyards and St. Clement Vineyards in Napa Valley, to St. Andrews Winery (Napa) and the Meridian brand in the 1980s, he always has had a knack for fashioning multi-faceted gems from one of California's most popular grapes.

Through the years, the core of his Chardonnay philosophy has remained clear and unchanged. The emphasis has been to retain as much fruit character as possible, and finishing the wine in a way that adds nuances and layers.

Throughout his career, the changes in technique, and hence in the wine, have been evolutionary, with no drastic departures in style. In many ways, the changes have reflected the evolution of the wine industry in California.

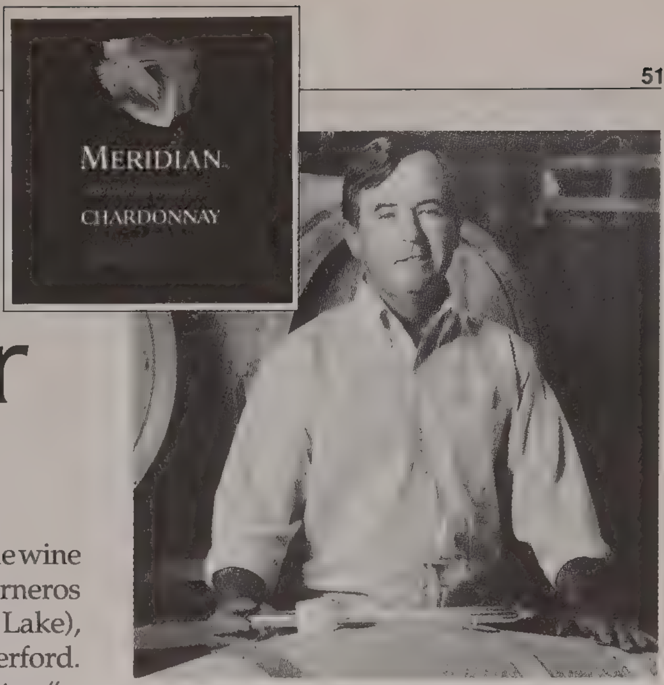
The early years

At Spring Mountain, Ortman made wine from a blend of grapes from the Carneros region of Napa (including Winery Lake), and Wildwood Vineyard in Rutherford. He remembers the Winery Lake fruit as "... lemony, very citrusy. Wildwood was basically a little more lush, rich. Also, while I was at Spring Mountain, they bought grapes from a vineyard on Big Ranch Road in Napa that produced lush and fruity grapes, excellent for blending."

In agreement with other winemakers, he asserts that "90% of a wine is made in the vineyard." He always has preferred a fruity style of Chardonnay and that has meant, preferably, a lot of fruit from Carneros. "From my experience, I think you get less fruit as you go north in Napa Valley."

At Spring Mountain, the grapes would be given some skin contact overnight to extract more fruit, in two instances: if rain was expected, or if the sugars were low and the vines had shut down so the grapes weren't going to get any riper than 21° or 22° Brix. The decision was based on taste and not by the numbers.

"Some years we picked at 22° Brix and had all the flavor components desired," Ortman says. "There were vintages where we picked at 22° Brix and had no choice." No acid adjustments ever were necessary with the Carneros fruit, but acid often was added to grapes grown further north in Napa Valley. At the crusher, 30 ppm SO_2 was added.



Chuck Ortman

To retain as much fruit as possible, the wine was cold-fermented in stainless steel until it reached between 14° and 16° Brix. Then it was chilled down to the mid 50s(°F) and racked into medium-toast Limousin (later a mixture of Allier and Troncais) French oak barrels, where it would warm up gradually and finish primary fermentation.

"We were looking for the vanilla quality," Ortman recalls. "We used roughly 50% new barrels each year, which were reserved for barrel fermentation. Champagne yeast was used to retain the fruit and Montrachet yeast was used to add some complexity, but we were scared to death of H_2S with Montrachet."

After primary fermentation, the barrel was topped and left to settle three to four weeks, then racked. The barrel was cleaned and the wine pumped back into the barrel on the light lees and left until it was ready to rack, in preparation for bottling. A portion (about ⅓) was tank-fermented in stainless steel, and then went into used barrels for further ageing.

Ortman left Spring Mountain in 1979

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and began consulting to several wineries. In 1979, he began a three-year partnership with Imre Vizkelety at St. Andrews in Napa. There he worked with fruit that was "... very complex, perfumey, a little more austere, and not in the style of a big wine. It took time in the bottle to develop."

But perhaps the most important change in winemaking at St. Andrews was the phasing out of Champagne yeast and introduction of Prise de Mousse. "The style of wine I'm trying to make works very well with Prise de Mousse," Ortman says. "It gives a more complex, integrated wine, a wine that has layers of flavor to it."

What about nitrogen additions to discourage stuck fermentations? "I never added any nitrogen, I don't use enzymes; I just use Prise de Mousse. It's been flawless." It also allowed more experimentation with ageing on the gross lees, without the fear of H_2S. And it created a lighter, livelier wine than Montrachet.

While at St. Andrews, Ortman started using more Allier and Troncais barrels. He is a great believer in mixing sources of oak and coopers.

In 1979, Francis Mahoney at Carneros Creek Winery, who had contracted for some grapes from Edna Valley (San Luis Obispo County), became ill, and St. Andrews was contacted about taking the grapes. That was when St. Andrews decided that only estate grapes would carry their label. Anything made from grapes grown outside the estate would be bottled under the Charles Ortman label. The wines made by Ortman in 1979, 1980, and 1981 were stainless steel tank-fermented because of logistics, and went to barrel on light lees for ageing.

Ortman left St. Andrews after 1982, did consulting, and collaborated with Bruce Rogers on some custom work for Bouchaine.

Birth of Meridian

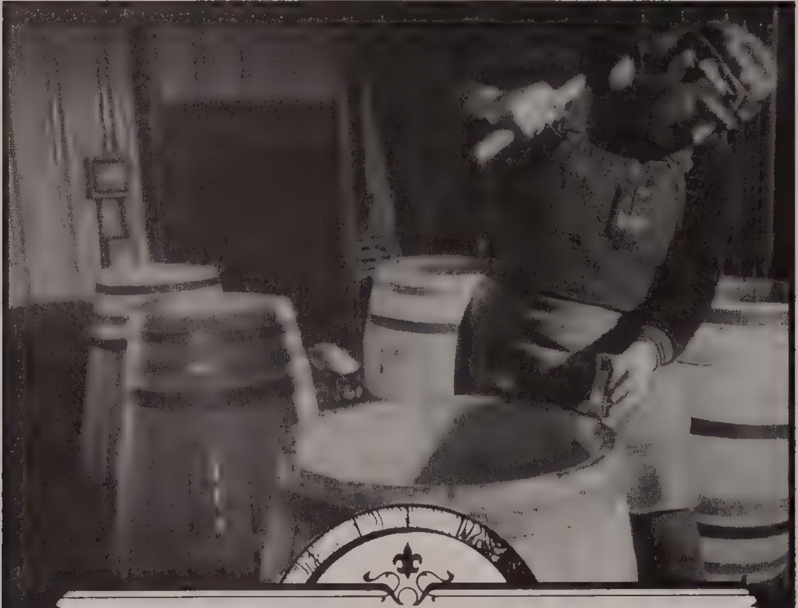
He started his own label, Meridian, in 1984. The 1984 Meridian was not barrel-fermented, having been bought in bulk from Cuvaison Winery, then barrel-aged and finished by Ortman at Markham Winery. Ortman began stirring the lees for the first time in 1984. "We've learned so much in the last 10 years — about lower SO_2s in the wine and stirring the lees to take the browning pigments out."

In 1985, everything was under Ortman's control. Grapes were purchased from Cuvaison and Monticello Vineyards. "We gave the grapes no skin contact. It was pressed, settled, and put into Allier and Troncais barrels for primary fermentation. We used only Prise de Mousse yeast and the wine stayed on the gross lees until March.

"About 20% to 30% was tank-fermented and then went into barrels. The philosophy of fermenting 30% in stainless steel tanks is still done at Meridian Vineyards today. The fruit had all the flavor components desired at 23° to 24° Brix (up-Napa Valley grapes tend to get all those components with less sugar). The 1986 and 1987 also were sourced and handled in the same way."

Ortman's career experienced a watershed in 1988. He sold the Meridian brand to Wine World Estates, who in turn retained him as winemaker. Wine World bought the former Estrella River Winery, in San Luis Obispo County, and relocated Meridian to Paso Robles.

That move greatly expanded Ortman's source of grapes to include Chardonnay from Santa Maria and Edna Valley (as well as 800 acres around the winery planted to other varieties), all marine-influenced.



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Besides the Meridian label, the winery is also a processing plant for all the Central Coast fruit for Wine World Estates.

Winemaking on the Central Coast

For Ortman, the Central Coast has proved to be somewhat different from Napa. For one thing, the picking order is reversed, starting with Pinot Noir, then Syrah, Cabernet Sauvignon, and finally Chardonnay.

"At River Bench Vineyard, there is well-drained alluvial soil with lots of rock. The vines exhibit the sought-after stress. After harvest, you can see these vines are in some stress and are low in fertility." Budbreak for Chardonnay is a month earlier than in the Carneros region, so there is significantly longer hang time.

However, the grapes he now works with are similar to Napa grapes. The 295-acre River Bench Vineyard in Santa Maria has overtones of lush honey and peaches that remind him of Monticello's vineyard on Big Ranch Road.

The Cat Canyon vineyard in the Santa Maria area produces grapes with Chablis-like qualities of lemon, apple, earth, and spice, reminiscent of Winery Lake and the Abbots-Williams Vineyard that is now owned by St. Clement.

Just west of Los Alamos, the 1,000-acre White Hills Vineyard produces a more delicate wine, with aromas of honeydew and kiwi, not very citrusy but complex, similar to Cuvaison and St. Andrews.

At harvest, Ortman goes through the vineyards constantly picking and eating and "... spitting seeds all over the whole section. If they taste right, then we look at the sugar. They tend to be 23.0° to 23.5° sugar. There are zero bags of tartaric at the winery because we have great pHs and acids (3.2 to 3.3 pH and between 0.92 and 0.95 total acidity)."

Ortman likes to see the finished wine in the 0.72 to 0.74 TA range, with a corresponding pH of 3.3 to 3.4, and 13.5% to 13.8% alcohol. He has the option to take specific sections of a particular vineyard. The 1988 was 30% from White Hills, 20% from Cat Canyon, and 50% from River Bench.

Ortman works closely with vineyard manager Bob Steinhauer. "I wanted to open the fruit to sunlight, so we went to a new trellising system with new plantings. We've been opening up the canopy and the grapes take on a nice golden color. There is fog in the morning, so when that burns off, I want those berries instantly exposed to the sun. In Santa Barbara County, 80° to 85°F is a hot spell, so there are never any sunburned grapes."

Ortman never has made a Reserve wine and sees no reason to start at Meridian. Instead, two different styles of Chardonnay are made, a Santa Barbara County wine from the three above-mentioned vineyards, and another from an Edna Valley vineyard in San Luis Obispo County. All vines are on their own roots.

Ortman wants to showcase the tropical fruit character of the Santa Barbara County Chardonnay, but at the same time he sees that character as so strong that it needs to be tamed. To that end, a portion (60% in 1989) is barrel-fermented.

"You have to use barrel fermentation; if you fermented the whole thing in stainless and aged in oak, you'd end up with a very awkward wine, very fruity nose, and very woody mouth."

Roughly 20% goes through malolactic

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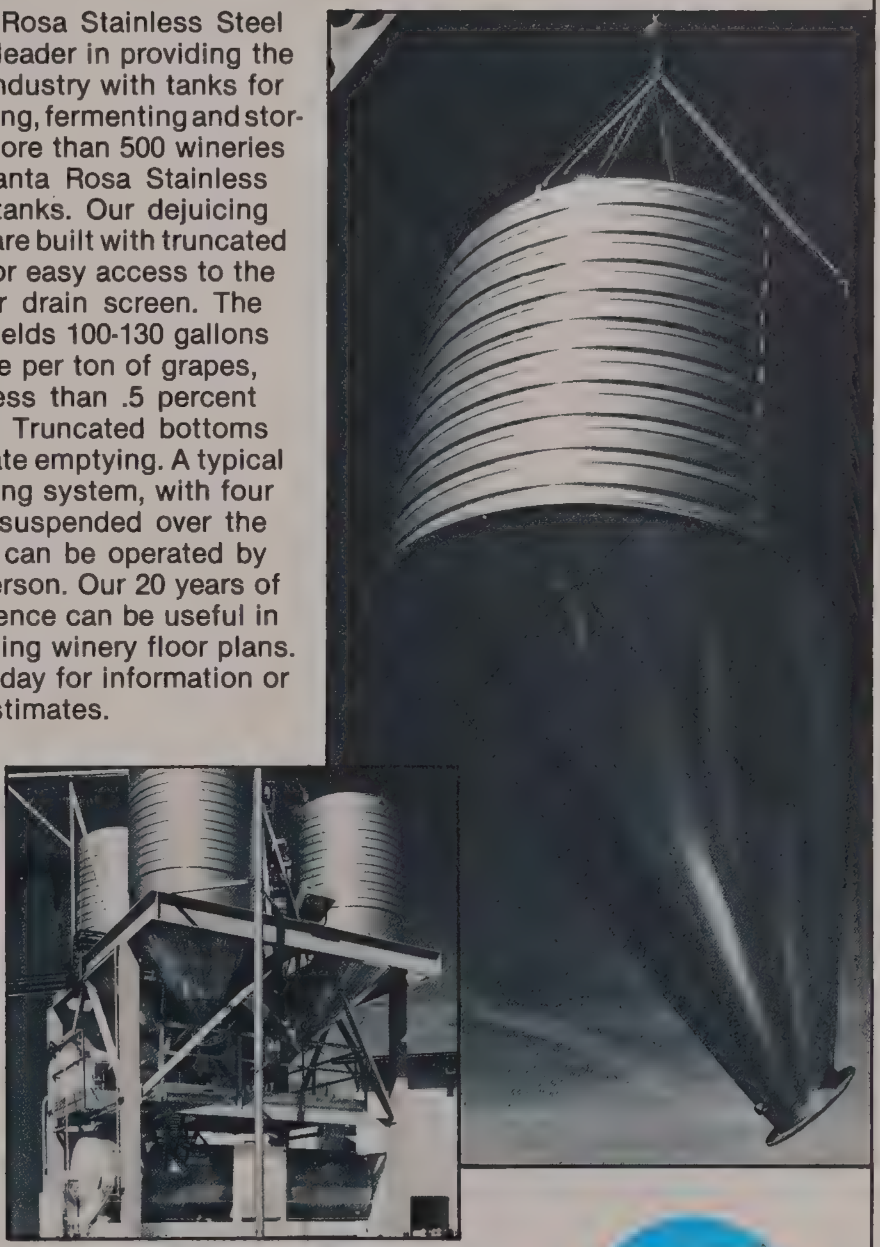

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fermentation in stainless steel during primary fermentation. The malolactic component in the Santa Barbara wine is not going to be as pronounced as it is in the Edna Valley bottling. It may be as little as 15% of the blend, but it will never be more than 25%. Ortman is looking for a reduction of acid and a smoother texture from the malolactic, and does not want to emphasize malolactic flavors.

All the new oak has one cycle of barrel fermentation. At the end of January, the wine is racked off the lees and every single barrel is checked. If the lees in the barrel are fresh and clean, the wine that was fermented in the stainless steel goes into the barrels on top of the lees and is stirred.

"We've just started leaving the wine on gross lees with the 1990. I realized that with barrel fermentation, the lees had to have picked up some nice oak components, so why should we wash all that down the drain? After two weeks, the wine seemed like it had been in barrel a whole lot longer."

For the Santa Barbara blend, roughly 15% of the barrels are Limousin, to extract the oak faster. "We ask for all medium-toast barrels. I never stick to only one cooper."

Edna Valley fruit goes through the dejuicing tank (never over eight hours), is pressed into another tank where it's settled to 2% solids (not above 2%), and inoculated. The non-malolactic portion receives 20 to 25 ppm SO_2 at this time. Then it goes into barrel and is inoculated a second time.

The Edna Valley is 100% barrel-fermented (60% in new oak, 40% in one-year-old oak) and stays on the lees until June. Between 40% and 45% is put through malolactic during primary fermentation.

"I'm not really looking for acid reduction in the Edna Valley blend as much as flavor enhancement as an added component, and to give the wine more body. I want to be able to smell it, but only as one factor, not the dominant factor. It has to be integrated with the lees, the oak, the yeast. We've found that the Matanzas Creek malolactic bacteria is the one to use, because I'm not looking for that full-blown butterscotch character."

When the barrels are brought down from the barrel stacks to adjust SO_2 at the end of malolactic, the lees are stirred. "Anytime any adjustment is made, the lees are stirred (I'd say at least three stirrings during barrel ageing)."

The barrels are topped monthly. The silicon bung is in the 12 o'clock position. "We have 90% humidity in the barrel room and that keeps the evaporation down. I want to see how that might affect the alcohol content."

Ortman always has used bentonite. "One pound to two lbs/1,000 gal is used, even when it's not indicated, because it has a way of rounding the wine out and getting some of the dirty flavors out. I always bentonite the wine, never the juice. We take it out of barrel, add bentonite, cold stabilize, sterile filter, and bottle, all within one month (usually in July and August)."

Winemaking is an evolutionary process, and Ortman sees a few changes on the horizon. He'd like to go to whole-cluster pressing for at least a portion of the Chardonnay. "To my knowledge, you get a much cleaner juice, with less solids, so it tames the fruit a little bit.

"I've approached winemaking every year like a painter walking up to the canvas," Ortman concludes. "You work with what you have. Maybe some years you're going to handle the wine a little differently than the previous year. It takes experience, looking through your notes, remembering."■

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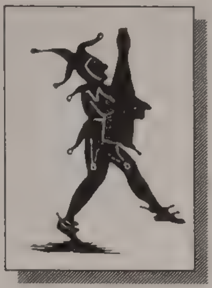

By Jake Lorenzo

You know, the current hard economic times affect everyone, not just people in the wine business. If you think it is tough selling wine out there, imagine what it is like trying to earn a living as a private eye these days.

Sure, the murder rate is up, but doesn't it always seem to be some drug dealer in a drive-by shooting, or some lunatic who snaps and wipes out the local McDonalds, or some serial killer stalking and slaying victims by the half-dozen.

Whatever happened to the simple, planned murder to get at the insurance or to get rid of an unwanted husband or wife? When was the last time you heard of one of those simple blackmail schemes gone awry only to be thwarted by the elegant, wise-cracking detective? Those were the kind of problems that could be handled by a trained private eye, such as me.

I'm telling you, there's nothing simple about trying to get someone to ante up a simple $250 per diem plus expenses in this recessionary economy. Even detecting adultery, the private eye's staple, has taken a nosedive in this AIDS-conscious culture.

Don't get me wrong. I'm not complaining. After all, Jake Lorenzo is an experienced, well-known throwback to all the movie private dicks you've ever seen. I'm doing alright, but now that I've celebrated my 45th birthday, I have been giving my future some thought.

Since my daughter, Jakelyn, only has one more year at college, which will relieve greatly my current financial burden, and since Jakelyn's mother and I still are getting along pretty well after all these years, I have been studying potential career changes for my future years.

Carl Sandburg wrote, "Time is the coin of your life. Be careful lest others spend it for you." I've tried always to spend my precious moments in the most pleasurable way. As a result, I've been pretty satisfied with most of my life, but I can't tell you the times I've met people with lots more money than I, who just seem plain miserable. They've got sailboats, private planes, condos in the mountains, luxurious shacks on the Thailand coast, but they never seem to have the time to enjoy them.

Enter Jake Lorenzo, welcome companion.

"Jake Lorenzo is a charming curmudgeon. He's well-read, loves fine food, and knows good wines. He's traveled around the world, speaks a smattering of several foreign languages, loves music and dancing till all hours. Jake is now available to help you enjoy all that expensive crap you've been working so hard to acquire."

Want to take that sailboat out? Feel the wind blowing across your face, suck down a few cold brewskies as your lips chap? Call Jake, he'll lift the mainsail.

Want to get out in the sloughs, drop a line in the water, watch the birds fly overhead while we try for that giant sturgeon? Call Jake, he loves drinking on boats.

Want to get up in the mountain cabin, hit the slopes, and then come home for a steak and some red wine in front of a roaring fire? Jake is ready to learn how to ski, knows how to barbecue, and even will shovel your walkway just for the exercise.

Get the idea? A welcome companion is a great concept. Jake Lorenzo is a guy just friendly enough and interesting enough and funny enough to take along on almost any trip to any destination on any mode of transportation.

Just one disclaimer: I'm not much of a camper. Jake Lorenzo's idea of camping is passing out at a rustic bar, indoors, in lumber country. It's not that I'm against nature; I love nature. I revel in the majesty of the redwoods. I enjoy the murmur of a babbling brook. I am thrilled by sunsets near any body of water. But hiking through forests and eating freeze-dried food is not my cup of tea.

In fact, on those rare occasions when I have a cup of tea, I like it to taste like tea, not like flowers or perfume. When I have a glass of wine, I like it to taste like wine, not like the toasted insides of some majestic oak tree grown in some verdant forest in the center of France.

I don't consider myself a connoisseur, but I do know the difference between a dish subtly accented by different spices and seasonings, and that same dish hopelessly foundering in piles of garlic. I know the difference between a salsa concocted of different chiles so that complex, exotic flavors burn through the fire, and a bowl of chopped-up jalapenos, onions, and tomatoes that is all heat and no flavor.

I know that, in general, novices are most appreciative of a single, prominent flavor. However, as their palates learn about food and wine, they are supposed to become more able to pick out and appreciate the subtleties. They are supposed to be more able to understand balance. They recognize the essence of the main ingredient, but they appreciate the seasonings attending it.

In wine, grapes are the main ingredient. All else — fermentation techniques, barrel usage, and blending — are simply the seasonings. That is why, for the life of me, I cannot understand why so many supposed experts still confuse the seasoning with the main ingredient. I can't understand why people spend $25 to $60 for oak seasoned with grape juice, when they can buy some truly lovely wine accented with oak for half the price.

The February 1992 issue of ***Connoisseurs' Guide to California Wine*** has an extensive review of Sauvignon Blanc. Looking at the several offerings receiving three puffs, you can read the following: "Abundant oak takes an early lead in the intensely toasty aromas ... Although this ample wine's billowy oak seems at first to steal the show ... Creamy oak serves as a most attractive counterpoint ... Lots of toasty oak and dried brush elements..." I am not intending to single out the ***Connoisseurs' Guide***; all the review publications have this sweet tooth for oak. So, it seems, do most of the judges currently awarding medals.

It may be that current taste has passed me by, but something has to be wrong when wineries spend more money for oak than they do for the source material of grapes. Depending on the variety, grape costs average $900 to $1,400 per ton. Figuring 160 gals/ton, and $550 to $600 per French oak barrel, the price for new oak is $1,600 to $1,800/ton.

This makes no sense. It is like spending $20 per pound for fine, aged steaks flown in from Chicago and then spending $40 for the charcoal to barbecue them.

Now, Jake Lorenzo is not saying there's anything wrong with intense wines full of toasty oak flavors. I am saying that those of us with experience and expertise should differentiate between a wine loaded with oak and those wines delicately accented and balanced with a melange of aromas and flavors. We should appreciate, in short, the difference between a dish overloaded with garlic and the same dish balanced with garlic, basil, parsley, salt, and pepper.

In the premium wine market, oak-flavored wine is becoming equivalent to fast food. Load that wine up with new oak and the critics will rhapsodize over it. Overpower the fruit with lovely, toasty aromas and the public will wait in line to hand you their money.

But don't mistake that for the art of making fine wine. After all, great chefs are not hanging out at McDonalds trying to steal recipes. ■

Blind men groping at the elephant

By Patrick Campbell
Laurel Glen Vineyard, Glen Ellen, CA

This is Part II to the March/April story, "100 points are fine for dog races and math tests."

The old man hunched through his cellar door. The others stooped low to enter. Only our shadows were visible in the murk. Someone tripped over a black dog on the floor. The old man roared. He poked the dog out of our way with his stick, led us over to a large, filthy black barrel, and drew us a cool sample. It was a glowing ember, earthy, truffly, dense with the exotic perfume of his remote hillside vineyard. The taste was briery and its overall image autumnal, like the old man and his dog in the fall of their lives.

As a token of thanks for our having sought him out, the old man sent us away with a bottle. I took it home and treasured it.

I recently read a review of this wine in a respected wine journal. The writer described the wine as "thin, tired, brown at the edges, over the hill, coarse, but with an earthy and rustic perfume." He rated it a 72.

I heard that the old man had died recently. I took the bottle from its resting place and drank it one evening with a friend. It was not a majestic, world-class wine, but it was full of the autumnal fire and brown earth flavors of the old man's cave. It spoke to us of the old man and his black dog, of his hunched back, and a trip with friends to his hillside cave. It gave us pleasure, and we raised our glasses to his memory.

The other day, I found a few bottles of his wine gathering dust at a wine store. The wine merchant told me he couldn't sell the bottles because they had received a poor rating. Accordingly, he had affixed red discount stickers to their necks to move out the stock. I bought them all, and issued a silent curse to that wine writer.

The merchant's walls were lined with hundreds of wines of different vintages, provenance, varietals, prices, and labels. What could an innocent wine lover, simply wanting a delicious bottle for tonight's dinner, make of this babel?

Ideally, the salesperson is conversant with the stock: he has tried them all, and can recommend a suitable bottle. (And truly, there is no better way to learn about wine than through a closely-cultivated relationship with a reputable wine merchant.)

But what if he hasn't sampled them all, or doesn't care, or wouldn't know a Latour from an Asti spumante? There may be a card on the wine rack that reads: "This wine was rated a 90." And, lacking an alternative, the customer will buy it.

Wine writing should be useful because it is informative; it should impart a sense of direction and guide us through the daunting shelves of the wine merchant.

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It should inspire the reader to expand his vinous horizons. It should separate the good from the bad, and thereby encourage the reader to demand well-made wines of character and interest.

Wine criticism describes a wide stylistic arc. One pole treats wine as a mere expression of a cultural and geographical context; the opposite pole treats it as an artifact and an end unto itself.

The first treats our wine as an expression of the old man and his hillside vineyard; the other as a numerical rating. The first pole says you had to have been there to understand. The opposite says that wine simply is, intrinsically, the way it is. The spectrum goes from general to specific, from impressionistic to precise. Somewhere between these poles is the domain of descriptive wine writing.

An encounter with writers

Imagine three wine writers grouped around a table examining our wine; one is French, one English, and one American. They are joined by Mr. Publick, an avid amateur, who has subscribed to their respective journals for several years. Out of deference to the distinguished company, Mr. Publick remains silent. "I prefer just to listen," he tells them.

The Frenchman waxes poetic: "This wine is an old man, rich with wisdom, yet frail in body — an autumnal wine in the last years of its life," he declares.

The Englishman describes our wine as "fully-mature, perhaps a 1978, rich with the faded spice and crushed violets of a well-aged northern Rhone."

The American takes note of the wine's brown edges, the faint fruit aromas, and its overall lack of refinement: "Dull brick red, cinnamon and damson plum in the nose, a wine that is past-its-prime, rustic, and simple. Drink up now," he counsels tersely.

We're getting the picture. Ultimately, descriptive wine writers are blind men groping at the elephant; at best, they will approximate the wine. Wine writers, like our friends above, provide signposts on a road to a destination that never will be reached. The ineffable never can be expressed fully. Yet, as experienced wine judges, our international panel has demonstrated that, although their words differ, their individual perceptions of the wine are fundamentally the same.

Wine writers of the romantic school talk of the personalities, the images, the lore, and the ambiance of the wine. They relate impressions: meals with friends, ancient vines and hillside caves, portraits of the winemaker. They share their love of the fruit of the vine, and their readers follow along vicariously.

The romantic wine writer beguiles the beginner and sustains the experienced wine lover. Ultimately, romantic wine writing is the most satisfying; it both precedes and transcends descriptions and rating systems. It deals with the context of the wine — with those aspects that enhance overall enjoyment and augment pleasure.

Romantic wine writing is, however, often perceived to be of little value or interest to the neophyte wine lover, confronted with hundreds of wines in a wine store. Is it any wonder then, that legions of beginning wine lovers have been seduced by the 100-point system? It's simple, a no-brainer — it bestows instant pedigree or instant mediocrity or instant denigration. And fortunately, its stranglehold on the world of wine marketing is beginning to loosen. A new generation of wine drinkers is questioning not only its validity, but even its usefulness.

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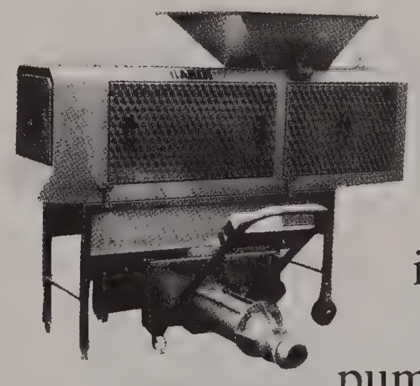

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Let's revisit our international panel of wine writers. At the American's insistence, the panel has rated our wine. The Frenchman refuses to play along. "Wine cannot be rated any more than art can," he sniffs. The Englishman rates the wine a 3 out of 5. The American rates it a 72 out of 100.

Our panel is invited to a tasting several days later. Unbeknownst to them, our wine is in the lineup. The Frenchman is intransigent — he refuses to cheapen his comments with a score. The Englishman likes the wine somewhat better this time, but again gives it a 3. Although different, it is neither substantially better or worse than it was the first time he tasted it. The American, on this occasion, also finds our wine more to his taste, and raises his score to a 79.

The scene is repeated a third time. The wine is distinctly changed (perhaps it came from a different cellar? Perhaps the previous night's banquet had dulled the writers' senses?). The Englishman sticks to his 3, the American changes to a 75.

The writers are old friends. They have judged wine together for many years; even though their methods of expression are varied, their fundamental assessments have remained the same, and over the years they have maintained a mutual respect. Maybe this time it was the wine; maybe it was an unconscious, creeping self-doubt that led them to engage in hostilities. Nonetheless, their tongues loosened.

The Englishman begins, "My American friend, over the past three tastings you have unwittingly demonstrated the underlying fallacy of your 100-point system (actually, a 50-point system). How can you be responsible to your readership if your scores change each time you taste the same wine? Unless your scores are consistent, they are invalid, and hence useless.

"I respectfully suggest," he continues, "that because my numerical rating is consistent, it is therefore both valid and useful, and I shall advise my readers that this wine is a 3 on a scale of 5."

The American is unmoved. "My precise numerical score, unlike your 5-point system," he bristles, "is broad enough to allow for fine distinctions. Your 5-point system, on the other hand, is so narrowly constructed that, although your scores are consistent, they are useless. They cannot account for the small gradations of quality that are meaningful to **my** readers, if apparently, not to **yours**.

"And furthermore, you gave the same score to a wine that appeared different to you on three separate occasions. At least I have the courage to change my score to reflect the differences!"

"My American colleague," retorts the Englishman. "Do you not find it ironic that your sprinkling of scores throughout the 70's is, in fact, no different from my 3 out of 5 rating? Is not your 80 to 89 in effect equivalent to my 2, and your 60 to 69 the same as my 4?"

At this point, the Frenchman joins the fray. He fixes his eye on the American. "I understand that many of your readers take single point differences in ratings as the **sole** basis of purchasing decisions. How unfair it is to give your readers the impression that a wine is minutely quantifiable when you change your opinion of the wine each time you taste it."

"That is unfair," the American protests. "I never have claimed to be infallible; and surely I am not to blame if my overzealous readers ignore my written comments and rely only on the rating."

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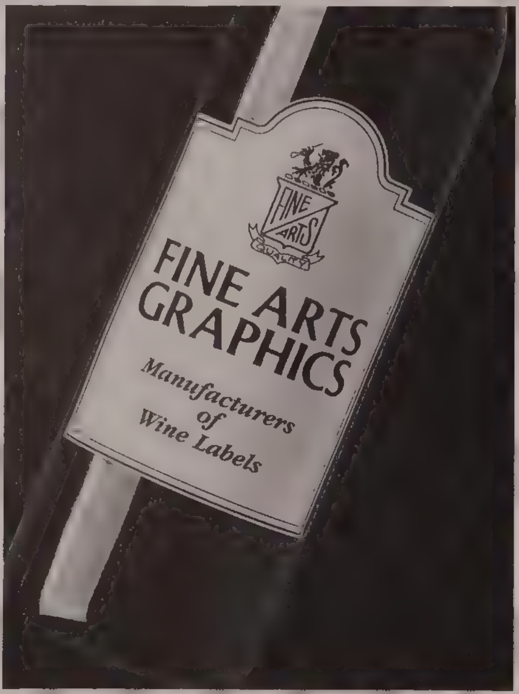

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"Mon Dieu!" The Frenchman exclaims. "A pox on **both** your numerical systems. Surely you do not feel obliged to keep score with Cezanne, Chopin, and Baudelaire? So why do you demean with ratings this noble beverage, an elixir that delights our senses and enhances our lives?"

"Ah, but my French colleague," the Englishman rejoins, winking to his momentary ally, the American, "by refusing to rate wines, you do your readers a grave disservice. How can they know by your mere description—as graceful at it may be—how to make informed buying decisions?"

"Yes," the American chimes in, "they are not purchasing old, wise men with frail bodies — they want guidance in buying wine, liquid in a bottle!"

The situation was clearly deteriorating, and permanent damage to friendships might have resulted, had not at the moment Mr. Publick cleared his throat. "Gentlemen," he begins. "For the past several years I have entrusted my love of wine to your guidance. And while you argued this evening, I silently reminisced about my vinous education.

"I knew nothing about wine before the Frenchman, with his passion and romance, touched my soul. I vicariously recreated his travels and friendships in the wine country through the wines he described. Through his words, the simplest country wines and the grandest growths became marvelous experiences and gave me pleasure.

"But I began to yearn for greater discrimination. I turned to the precision of the American's journal. Through his 100-point system, I soon learned the fine points of wine judging. I came to know the good from the bad, the noble from the humble, the 90 from the 70.

"I became obsessed with high-scoring wines, and spurned the delicate and rustic wines that had delighted me under the Frenchman's tutelage. I sought out only 90+ wines; the wine merchant's shelves finally had become rational. But before too long, all wines began to taste the same — tannic, opulent, majestic, oaky, concentrated — and I started to tire of them. Wine had become an end in itself, an artifact without context. So I sought out wine knowledge to rekindle my enthusiasm.

"The Englishman's scholarship heightened my appreciation of wine. I learned each wine's history, its geographical and technical details. I began to understand the differences between a California Cabernet and a Bordeaux, between a carbonic maceration and a high-temperature fermentation. And his 5-point system proved sufficient to guide me away from faulty wines. But in my fascination with the details, I lost sight of the greater picture.

"All three of you have influenced me in your own fashion, and for this I thank you from the bottom of my heart. Without each of you, I would not have discovered wine, learned its intricacies, and separated the wheat from the chaff.

"But although my cellar is full of high-scoring wines and my head full of information, my heart has lost its passion. I must rediscover my love affair with wine.

"So it is time for me to move on. I have heard of an old hillside vineyard that was abandoned following the recent death of its owner. I shall leave you gentlemen to your words and numbers, and seek it out for inspiration."

Mr. Publick shuts the door behind him. The wine writers argue on through the night and greet the dawn with a vague feeling of disquiet. ■

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CALENDAR

JULY 9-12, Thursday/Sunday

Women for WineSense 1992 Conference — Speakers and in-depth workshops on issues such as political, health and social, communications, finance, trade/marketing, international, education, and viticulture. **Location:** Red Lion Hotel, Rohnert Park, CA. **For more information, contact:** Women for WineSense, Margaret Smith, 118 Hillside Dr., Woodside, CA 94062, tel: 415/851-2319.

JULY 15-17, Wednesday/Friday

ASEV Eastern Section Annual Meeting — Includes a Wine Aroma Defects Workshop presented by Dr. Wolf-Rudiger Sponholz and Doris Rauhut from the Viticulture & Enology Research Institute at Geisenheim, Germany, Dr. Terry Acree, Cornell University, NY, and Dr. Roland Reisen, Ohio State University. The 'nose-on' workshop will include demonstrations with wine samples, lectures, and discussion.

In addition, there will be two days of scientific papers on enology and viticulture, supplier exhibits, regional wine tastings, student paper competition, scholarship awards, and a chance to meet and discuss mutual problems with other winemakers.

Location: Corning Hilton, Corning, NY. **For more information, contact:** Dr. Tony Wolf, VPI & SU, 2500 Valley Ave., Winchester, VA 22601, tel: 703/667-8330, fax: 703/667-5692.

AUGUST 13-16, Thursday/Sunday

ASEV Northwest Chapter Annual Meeting — Technical program will include 1½ days of technical sessions plus ½ day of technical workshops, one on vineyard evaluation and the other on wine microbiology. **Location:** Lake Okanagan Resort, near Kelowna, BC, Canada. **For further information, contact:** Dr. Andrew Reynolds, Agriculture Canada Research Station, Summerland, BC, VOH 1ZO Canada, tel: 604/494-7711, fax: 604/494-0755.

Grapegrowing Winemaking Courses, University Extension, UC Davis, CA

JULY 7-10, Tuesday/Friday — Wine Processing Workshop, Location: UC Davis. **Instructor:** Roger Boulton, PhD, Professor, Dept. of Vit. & Enol. **Time:** 9am-4:30pm. **Fee:** $650.

JULY 11-12, Saturday/Sunday — Wine Microbiology Workshop, Location: UC Davis. **Instructor:** Marilyn Vilas, Staff research associate, Dept. of Vit. & Enol. **Coordinator:** Ralph E. Kunkee, Professor Emeritus. **Time:** 8am-4pm. **Fee:** $350.

JULY 16, Thursday — Crush '92, Location: Inglenook Winery, 1991 St. Helena Hwy, Rutherford, CA. **Coordinator:** Clark Smith. **Time:** 9am-4pm. **Fee:** $75.

JULY 23, Thursday — Successful Wine Marketing, Developing Strategies for Key Regions, Location: St. Supery Winery, Rutherford, CA. **Instructor:** Joe Andre, JJ Andre & Associates. **Time:** 9am-4pm. **Fee:** $120.

JULY 29, Wednesday — Vineyard Canopy Assessment Workshop, Location: UC Davis. **Instructor:** W. Mark Kliewer, PhD, Vit. & Enol. Dept., UCD. **Time:** 9am-4:30pm. **Fee:** $100.

AUGUST 8, Saturday — Successful Home Winemaking, Location: UC Davis. **Time:** 9am-3pm. **Fee:** $65.

AUGUST 15-22, Saturday, Sunday, Wednesday, Saturday — Step-by-Step Winemaking, Location: UC Davis. **Instructor:** Jim Lapsley, Continuing Education Specialist, Unex UC Davis. **Time:** 9am-12noon, Sat/Sun, 7pm-9pm, Wed, 9am-12noon, Sat. **Fee:** $180.

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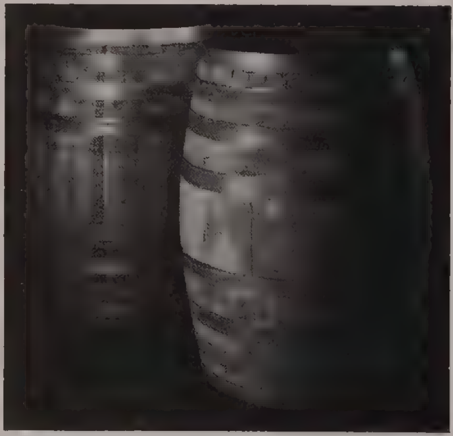

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Family winemakers *'fight the good fight'*

**By Jess Jackson, President
Family Winemakers of California**

(From a presentation to the first annual meeting of the Family Winemakers of California, February, 1992.)

> **WARNING: This speech may be injurious to the health of ... fat cats, bureaucrats, and autocrats.**

Fat cats are happy with the way things are; bureaucrats, with regulations that may be unconstitutional. Autocrats are big guys with big power simply because they're bigger than others in the wine industry.

The wine industry — how do we define that? Is the wine industry part of the beverage industry? That definition really doesn't include small wineries. Is the wine industry part of a narrower alcohol industry? Well, that doesn't fit us, either. In truth, I don't believe there is a wine industry encompassing ***all*** wineries. In truth, the wine industry is really ***them*** and ***us***:

Them — The commercial, mass producers of cheap, generic wines; and multi-national giants more concerned with the exchange rates and imports and wine coolers than with boosting California quality.

Us — The smaller, quality-wine producers of California — the premium, super-premium, and ultra-premium end of the business.

The ***us*** part was not represented in the old wine industry. That wine industry was autocratic. (It still does not have democratic procedures.) Those who controlled that wine industry made unwise and selfish alliances, and cut their political deals alone in back rooms.

The small, quality-wine producers weren't represented — until now! Now, many quality-wine producers are represented by a young and dynamic organization, Family Winemakers of California (FWC).

First and foremost, Family Winemakers is a ***democratic*** organization: one winery, one vote. Size is not equivalent to power. Each member has the same clout, and the majority rules. The criteria for membership are simple: The producer must be a ***family*** winery making quality wines — varietal, tablewine, méthode champenoise, or classic fortified wines.

Wineries can join FWC at any time, and can leave at any time. Open discussion and debate by all guide us to the right decisions. The amount of dues are up to each member. And, members of FWC can belong to any number of other organizations. For example, many also belong to the Wine Institute and the Association of American Vintners.

Filling the void

FWC was formed to fill a void about two years ago, starting with just five wineries. Today there are 110 winery members, and membership keeps growing.

FWC won a major political war concerning the Wine Commission in a David-against-Goliath replay. David overpowered Goliath, by beating down a producer tax through the Wine Commission that represented a raw abuse of power and that discriminated against small wineries. That tax was wrong. It was taxation without representation. There was **no** representation of quality wineries in this situation until FWC intervened.

Family Winemakers was the **only** voice in Sacramento, CA opposed to the back room deal with beer and spirits producers that raised taxes on wine about five times more than those on beer. We've proved it can be done, and small wineries can do it again. Why? Because right is stronger than might. With truth, we capture the minds and hearts of those who count. We stand for solid values.

For decades, the small family wineries of America have been used as a shield to protect abusers within alcohol's ranks. Well, FWC says no to this tactic. We want to pull down the shield. We want to convert it to a sword to lead the charge to correct problems. We want an open debate. We want to be proactive, not reactive. We want our industry cleaned up.

Government can't solve our problems for us, and shouldn't. We've got to do it ourselves. What's more, we can do it ourselves. The logical leader for this good fight is FWC, because we hold the crucial keys: 1) A democratic makeup; one winery, one vote. 2) We seek the truth, the facts about quality wine; its merits, not just its past glories. And, yes, its demerits and abuses.

Industry problems

What are the problems? The four most serious ones demanding our attention are:

1. Targeting skid row and building profit on human misery.

It is painful, but we must acknowledge that some producers of commercial wine (cheap, fortified pear juice, wine, brandy, etc.) clearly target skid rows or the ghettos as markets. In so doing, they target abuse and addiction, for profit. And they cast disgrace on all winemakers. The quality-wine segment of the wine industry should cry out against this.

2. Advertising to under-age alcohol consumers.

Advertising of wine coolers, like beer, is targeted to youth younger than age 21. Where do you see beer advertised? On TV. What is the setting? Usually a sports or recreation event. This advertising encourages alcohol use by a segment of the public that has not been educated to be mature enough to handle alcohol. I believe, and FWC should acknowledge, that this has created a social problem which leads to alcohol abuse and drunk driving. The alcohol industry must correct this from within.

3. Drunken driving

In the U.S., DUI (driving under the influence) is a major concern of all Americans. The alcohol-related deaths and serious injuries to teenage drivers or adults under the age of 25 are particularly shocking to us all. Quality wine should be proactive and join to correct this.

4. Alcohol abuse

Wine is a food. Just like cheese and bread, wine ferments. But, the finished product, wine, contains alcohol — and alcohol can be abused and become addictive. Moderate consumption of wine is certainly one of the answers, but how do we achieve it?

I've outlined above what I believe FWC should be absolutely against. Now I'll express what FWC should be for; the goals of FWC as I see them. Please understand that these goals should be decided by all members of FWC.

Teach children about alcohol

FWC goes beyond simply publicly supporting moderate consumption of wine. We propose a way to help reach this critical goal. We propose a program of education in the public schools, teaching our children the realities of alcohol.

We urge **all** of the alcohol beverage industry to join us and make this goal a reality. FWC should be eager to spearhead it. We'll send our own people to the schools to help teach students the pluses of moderation, and the negatives of alcohol abuse.

This is not a radical idea. We used to do it in our homes. Australia does it. Their problem was beer. We in America need to face our problems, too. The alcohol industry needs to admit its problems and deal with them. Government regulation isn't the answer.

Control has to come from within the individual and from within the industry. Education is a key. At all times, we must defend the individual's right of freedom of choice, but teach them to be responsible. We must help them make a mature choice.

Removal of restrictions

Another goal of FWC should be the removal of restrictions upon marketing quality wines in the U.S. Only in the U.S. do restrictions from archaic legislation persist, requiring the small winery to go through state regulations and unnecessary distributor channels to reach the marketplace. In most other countries — France, Italy, Germany, Australia, Chile — a winery can choose to market wines directly or through distributors to the marketplace.

In all other countries, a winery can take its wine directly to a restaurant or retailer. But in the U.S., distribution is controlled by state legislatures which in turn are controlled by local distributors.

Compounding this inaccessibility, larger distributors in our existing three-tier system seem to ignore the profit-potential of quality wine. Most FWC members, the premium boutiques of California, have little entree to these larger distributors. On the one hand, it's too troublesome and inefficient for the distributor to deal with 700 brands and five new facings each year. On the other hand, it's too costly for 500 small wineries to travel nationwide to sell their wines.

From the consumer's perspective, what's wrong with this picture? Family Winemaker's wines are the fabled "wines nobody can get!" Mainly because, in most states, we're not allowed to get them to the consumer. From the restaurant, the retailer perspective, what's wrong with this picture? Other than in California, we can't efficiently and economically get them the wines that give them the most profit! This is crazy.

Little wonder that FWC wants the three-tier system to open up to the small producer. And we want interstate trade barriers removed. We want reasonable reciprocity laws in all states so we can market our wine directly if we want to. If this problem persists, some small wineries, offering the consumer exceptional quality, will not be able to survive in hard times.

The winners of change will be the consumer, small restaurant, and retail business who now must pay for unnecessary middleman markups. Taxpayers also will win. Why pay for needless bureaucracy?

Research and development

FWC would like to see a wine-industry sponsored program of research and development. It used to be that scientists at major universities conducted all-important research in a broad range of vineyard and wine quality areas. The University of California and the state college system are the reason California is now a world leader in quality wines.

But this important activity has been cut back by the budget squeeze in our institutions. It's critical, however, that R&D continue, particularly in health issues, and FWC is ready to contribute to it, because the FWC rallying point is ***quality wine***. Let's learn more about health through research and development, and educate people with the truth about wine.

Health

Better health should be a critical goal of FWC. Since we have a product that, properly used, can contribute to better health, we ought to let the world know about it. We ought to feel morally obligated to let the world know. And we should fight the bureaucrats, legislators, and neo-prohibitionists who want to block the truth.

Yet, in the wine business, we hold back from citing the research of science and medicine which, time and again, indicates astonishing health benefits from wine taken in moderation.

We feel we have the right to speak out on health issues. At the same time, we know we should proceed cautiously while scientific evidence is gathered. But meanwhile, the evidence mounts in our favor in studies by Harvard and Boston University, by INSERM (the French equivalent to the U.S. National Institute of Health), and by many, many others.

Even the prestigious and consummately cautious National Academy of Sciences finally has said something. In the Academy's new nine-point plan for a healthier life, it advises, "Limit alcohol to two drinks/day." The point here is not that the Academy reasonably limits alcohol. The point is that alcohol is mentioned at all. This is a tremendous breakthrough, considering the source. Now the Government Accounting Office is stating that federal agencies' promotion of alcohol abstinence is ineffective to curb alcohol abuse.

Even more interesting is a statement made by CBS News correspondent Morley Safer during a recent "60 Minutes" report called "The French Paradox." Safer said, "A number of American doctors, none of whom would go on record, told me that if it was up to them, they would get rid of milk in the school lunchroom and exchange it for watered wine. The American milk habit, they said, is priming our 12-year-olds for heart attacks at age 60."

FWC is not suggesting that watered wine be put in school lunchrooms. But we do suggest we be given unbridled access to an open mind on the possibility of health benefits through wine in moderation; moderation is defined as two glasses/day.

I'm not saying that wine and all alcoholic beverages don't have a downside. They do — when they're abused. Lots of food and beverages carry negative health impacts. Soft drinks aren't perfect. Why do we encourage consumption of sugar-based products which are related to cancer?

In France, they take their children off milk after age five or six and, a few years later, start them on wine, heavily diluted with water. The French drink wine as a food staple and, at the same time, will deny they drink alcohol at all. In balance, they simply regard wine as a positive, beneficial food.

Yet, in America, we're banned from saying in advertising or on wine labels that wine ***in moderation*** just might be a plus, rather than a negative. I think this ban is wrong. As a former trial and appellate lawyer, I believe this ban violates the constitutional guarantee against prior restraint on freedom of expression. Testing the ban on this basis will not risk our licenses, and will not risk disciplinary action against us. FWC should support a test of this ban!

Little wineries like those in FWC are an endangered species. Consolidation is happening. We're part of the entrepreneurial spirit of this country, and we're seriously endangered by excessive taxation, and pressures and tactics of multi-national and domestic Goliaths.

We can't let the small wineries be squeezed out, because the essence of our cause is giving the consumer quality. Quality is our product and our way of life. For that reason alone, it is essential that we survive and be allowed to compete, because competition increases quality. Consumers reap the benefits of more variety and higher quality at an affordable price.

Other contributions

Quality aside, if you ever take away the small producers, you'll put a giant hole in the economy. In 1987 alone, the wine industry in the U.S. hiked the nation's economic output by nearly $32 billion, paid $8 billion in wages, and paid more than $2.5 billion in taxes to state and local governments. In 1987, $1.5 billion was contributed by wine in Sonoma County alone.

California's single largest industry is agriculture, and the single largest component of our agriculture is the grape. Wine is more important to California's economic lifeline than most people ever dreamed.

Do small wineries collectively have

power? You bet we do! The commercial, mass producers of generic wines account for 65% of all American wine produced, but only 33% of the total revenue, and only 20% of the profits. Conversely, the premium table wine industry accounts for 80% of all wine profits. That's all through the system—to the restaurateur, retailer, and wholesaler.

Wine is probably the most pro-environment industry in California. Wine uses few pesticides. Wine farming is at least quasi-organic, and in some cases, purely organic. Wine leaves open space. Wine marries nature.

FWC is a clear example of the old, true work ethic and entrepreneurship that boosted America to the very top. No America-bashing going on as far as California quality-wine is concerned. Because now, all other wine nations, even France, admit California wine is the world-leader in quality.

FWC's challenge

Who wouldn't want to:

- Be on the horizon of new health discoveries that say your product—wine—could make a difference in life-expectancy?
- Be in the thick of reform, able to help fix long-standing problems? Able to stand up to the Big Guys and say **NO**; no amount of profit justifies exploitation of human suffering. No, it's wrong.
- Be in a business that makes the best product of its kind in the entire world?
- Try to help our kids? To go to the schools and speak the truth the good ***and*** the bad — about our product? To enrich many lives — and maybe even save some?

All of these goals represent the need for substantial change in a wine industry that, we think, ***must*** change, ***must*** meet its social responsibility. There may be obstacles ahead for those of us urging these changes. But we've fought the 'good fight' before. We must be ready to do it again. We just hope that all of you will be in our corner lending a hand, even taking the lead, doing the right thing — and let's have fun while we are doing it! ■

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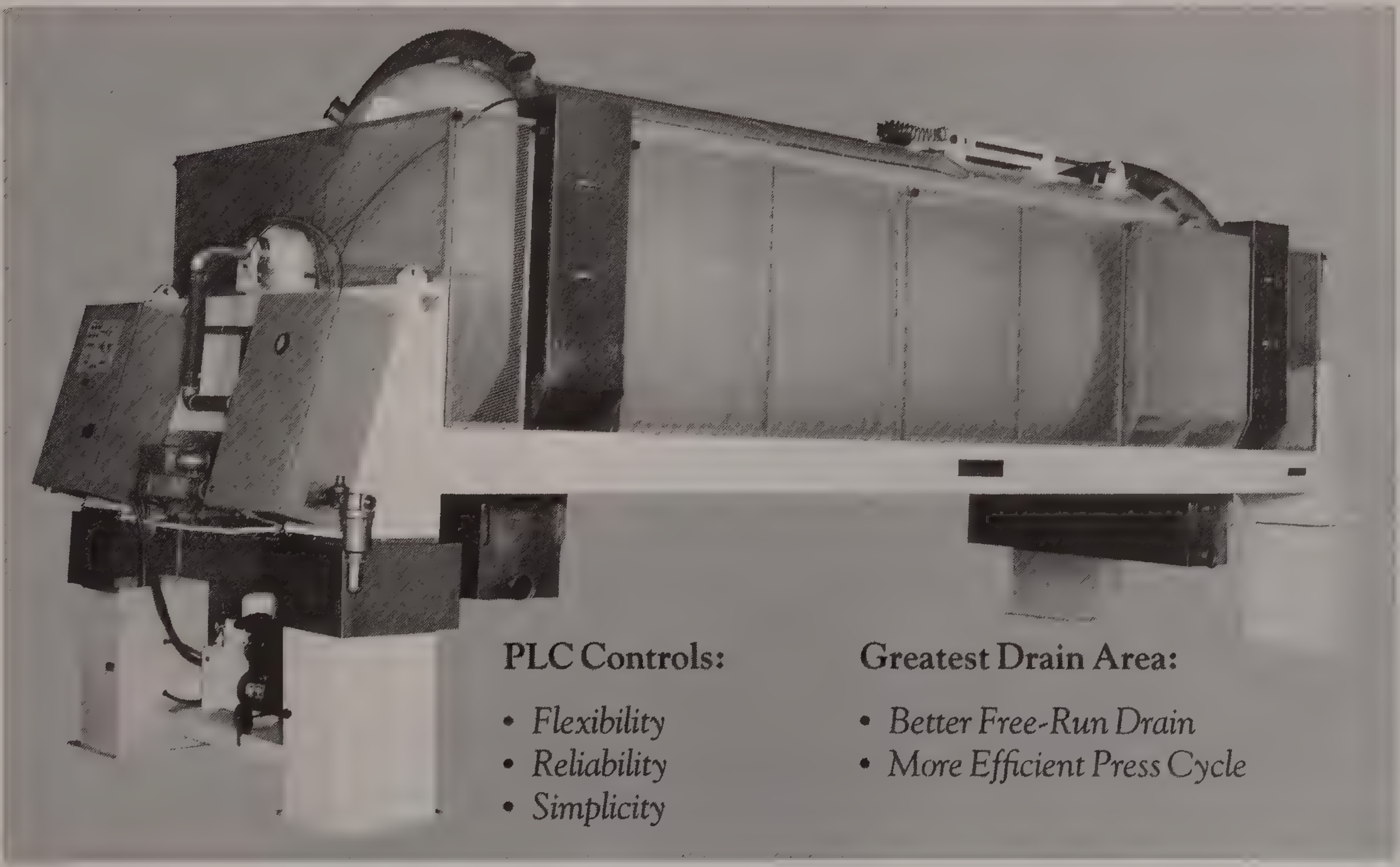

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Power system disturbance problems in the winery

By Ken Arthur

Several years ago, a winemaker for a large California winery suggested I write about what can be done to correct electronic equipment and computer system problems that are often caused by spikes, surges, sags (voltage drops), frequency changes, etc. that 'contaminate' power distribution systems in the winery.

It is difficult to add anything new to the extensive information available on this subject. But this report will attempt to put some of that information in a more understandable format and share insights I have gained in recent years.

What is a power system 'disturbance'?

The vast majority of information available on power system 'disturbances' is quite technical: how they occur, why they occur, and what they can cause. Likely all you want to know is what you can do about them.

The word 'disturbance' covers a number of problem conditions that may occur on your electrical power distribution system. These disturbances may happen individually, simultaneously, sporadically, continuously, or perhaps only rarely. So how do you determine which condition(s) is causing the problem?

Types of disturbances

Before you can understand what various protective devices will do for your system, it is important that you have at least a fundamental understanding of the kinds of disturbances most likely encountered in a winery. Some of the easiest to understand, from a non-technical standpoint, are shown in Fig.1, a chart published by Onan, a manufacturer of standby power systems.[1]

This chart does not list all disturbances that can affect sensitive electronic equipment, but notes the most common occurrences in an industrial facility. Your winery likely will not experience all these disturbances simultaneously or continuously. Identifying which disturbances are occurring is the difficult, time-consuming, and expensive part of answering the question "what can I do about them?".

Origins of disturbances

The chart in Fig.1 shows that 'power surges,' 'electrical noise,' 'chronic overvoltages,' and 'power sags' have some common causes. These include heavy electrical equipment being turned on or off, operation of motor control equipment and arc welders, and internal generation from heavy equipment. The truth is that your own facility generates a good portion of power disturbances.

If you monitor your winery power distribution system with equipment designed to be fast and sensitive enough to identify specific line disturbances, you will find a significant increase in disturbances during harvest. As much as we would like to blame the local power utility company for all of it, the equipment used creates some of the problems.

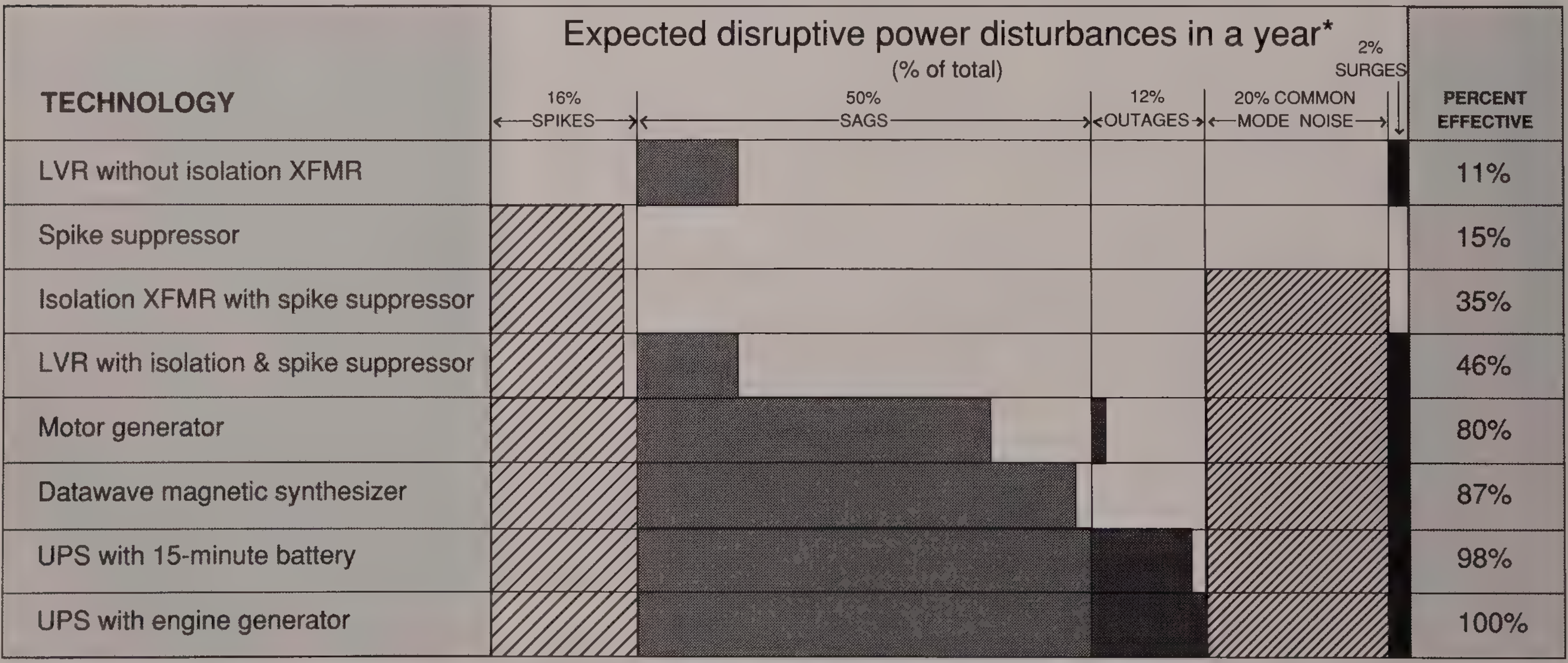
In fact, the 'electronic revolution,' is creating power-line disturbances of its own. The everyday culprits: computers, FAX and copy machines, electronic lighting ballasts, even UPS (Uninterruptible Power Supply) units installed to protect computers. Essentially these electronic loads are 'nonlinear,' and they create considerable harmonic distortion on the electrical power distribution system. Where a significant nonlinear load exists, the resultant harmonic distortion can cause transformer overheating, overloaded neutrals, and electrical 'noise' that will affect other electronic equipment.

Protecting sensitive equipment

Power line disturbances not only affect computers. Lab analyzers, tank temperature monitoring devices, and other sensitive electronic equipment are also affected.

Some companies have purchased mass quantities of protective devices, including line conditioners and spike arrestors, from computer and office supply houses, in the hope that these will eliminate all problems.

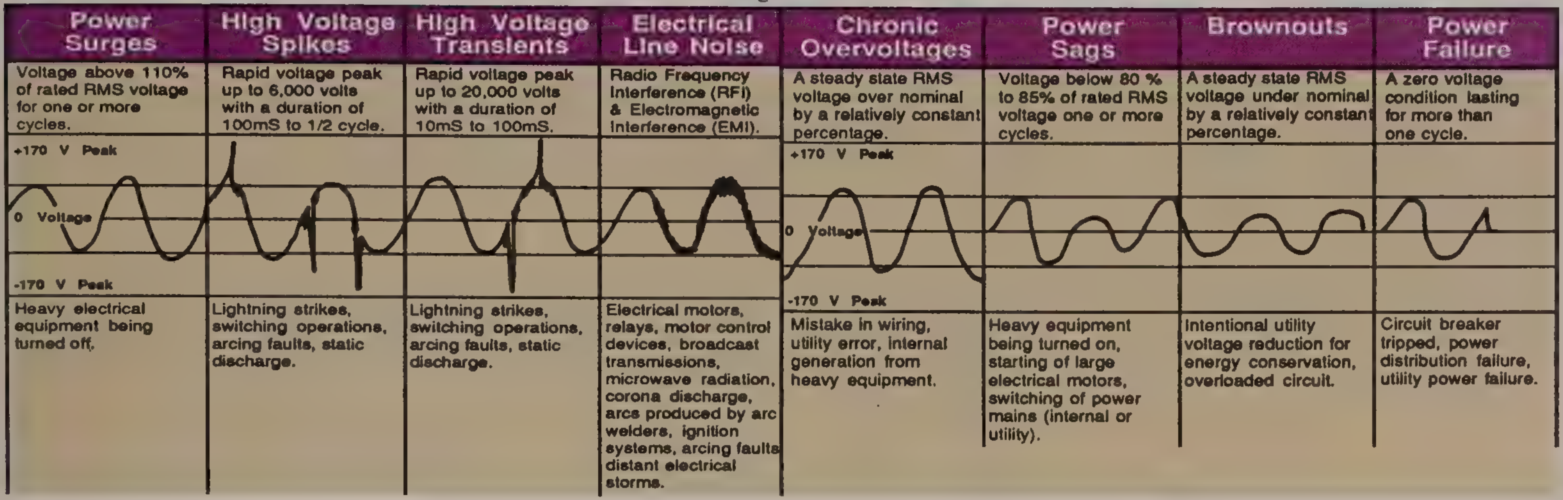
Figure 2



Courtesy of Liebert Corporation

*Expected disruptive power disturbances per year were obtained by combining the results of the Allen-Segall and Goldstein-Speranza studies using thresholds generally accepted as causing computer system problems: • spikes greater than 100% peak • sags greater than -20% RMS • surges greater than +10% RMS.

Figure 1



Power Surges	High Voltage Spikes	High Voltage Transients	Electrical Line Noise	Chronic Overvoltages	Power Sags	Brownouts	Power Failure
Voltage above 110% of rated RMS voltage for one or more cycles.	Rapid voltage peak up to 6,000 volts with a duration of 100mS to 1/2 cycle.	Rapid voltage peak up to 20,000 volts with a duration of 10mS to 100mS.	Radio Frequency Interference (RFI) & Electromagnetic Interference (EMI).	A steady state RMS voltage over nominal by a relatively constant percentage.	Voltage below 80 % to 85% of rated RMS voltage one or more cycles.	A steady state RMS voltage under nominal by a relatively constant percentage.	A zero voltage condition lasting for more than one cycle.
Heavy electrical equipment being turned off.	Lightning strikes, switching operations, arcing faults, static discharge.	Lightning strikes, switching operations, arcing faults, static discharge.	Electrical motors, relays, motor control devices, broadcast transmissions, microwave radiation, corona discharge, arcs produced by arc welders, ignition systems, arcing faults distant electrical storms.	Mistake in wiring, utility error, internal generation from heavy equipment.	Heavy equipment being turned on, starting of large electrical motors, switching of power mains (internal or utility).	Intentional utility voltage reduction for energy conservation, overloaded circuit.	Circuit breaker tripped, power distribution failure, utility power failure.

Courtesy of Onan Corporation

A spike suppressor or line conditioner, for example, will not protect sensitive equipment from voltage sags, brownouts, or power failures, because they have no internal power source to hold up the voltage and carry the load. These three conditions, however, make up 60% or more of the disturbances that a typical winery electrical power system likely encounters.

Additionally, a spike suppressor is designed by the manufacturer to provide protection within a specified range. If your electrical power system is experiencing high-voltage transients (spikes) outside the range of the device, it very well may destroy the spike suppressor, along with some computer hardware components.

To properly apply these protective devices, you would need to know the parameters of the disturbance and the limitations of the device.

Let's look at Fig.2 for an effectiveness comparison.[2] The Liebert Corporation developed this chart based on studies that tabulated the types of disturbances commonly occurring on an annual basis. I find it interesting that sags (voltage reductions) and outages (total loss of voltage) comprise 62% of the expected power disturbances.

If that is a fairly accurate representation of the occurrence frequency on your system, and it likely is, then the purchase of a spike suppressor from your local computer supply store is not going to protect your equipment from the most likely power disturbances.

Unless you know specifically which disturbance condition(s) you are encountering, and the exact parameters of the disturbance(s), you cannot select the proper equipment to protect sensitive electronic devices. In my opinion, anything short of an uninterruptible power supply that includes power backup, line conditioning, and surge protection in one package, is a waste of money.

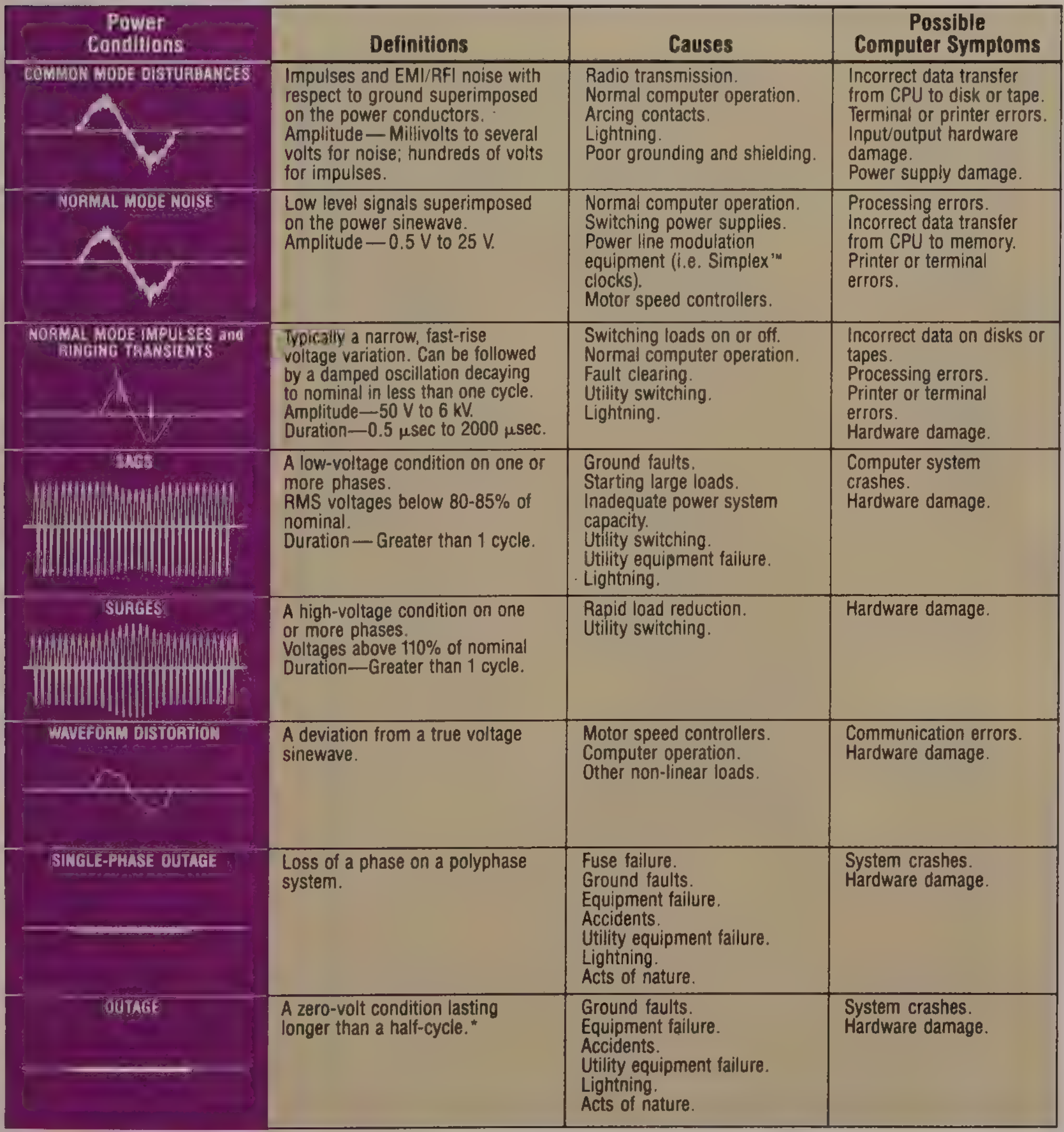
Note, from the chart in Fig.2, that a 'good' UPS unit with a 15-minute battery backup is about 98% effective in protecting equipment from the five most common disturbances.

Damage caused by disturbances

Fig.3 shows another Liebert chart listing power disturbance conditions, their likely causes, and possible computer 'symptoms.'[2] Often these computer symptoms and others are caused by hardware and/or software malfunctions, but are blamed on 'unclean power' by the computer manufacturer.

If you have taken the precaution of protecting your sensitive equipment with a quality UPS system, you have some basis

Figure 3



Power Conditions	Definitions	Causes	Possible Computer Symptoms
COMMON MODE DISTURBANCES	Impulses and EMI/RFI noise with respect to ground superimposed on the power conductors. Amplitude — Millivolts to several volts for noise; hundreds of volts for impulses.	Radio transmission. Normal computer operation. Arcing contacts. Lightning. Poor grounding and shielding.	Incorrect data transfer from CPU to disk or tape. Terminal or printer errors. Input/output hardware damage. Power supply damage.
NORMAL MODE NOISE	Low level signals superimposed on the power sinewave. Amplitude — 0.5 V to 25 V.	Normal computer operation. Switching power supplies. Power line modulation equipment (i.e. Simplex™ clocks). Motor speed controllers.	Processing errors. Incorrect data transfer from CPU to memory. Printer or terminal errors.
NORMAL MODE IMPULSES and RINGING TRANSIENTS	Typically a narrow, fast-rise voltage variation. Can be followed by a damped oscillation decaying to nominal in less than one cycle. Amplitude—50 V to 6 kV. Duration—0.5 µsec to 2000 µsec.	Switching loads on or off. Normal computer operation. Fault clearing. Utility switching. Lightning.	Incorrect data on disks or tapes. Processing errors. Printer or terminal errors. Hardware damage.
SAGS	A low-voltage condition on one or more phases. RMS voltages below 80-85% of nominal. Duration — Greater than 1 cycle.	Ground faults. Starting large loads. Inadequate power system capacity. Utility switching. Utility equipment failure. Lightning.	Computer system crashes. Hardware damage.
SURGES	A high-voltage condition on one or more phases. Voltages above 110% of nominal Duration—Greater than 1 cycle.	Rapid load reduction. Utility switching.	Hardware damage.
WAVEFORM DISTORTION	A deviation from a true voltage sinewave.	Motor speed controllers. Computer operation. Other non-linear loads.	Communication errors. Hardware damage.
SINGLE-PHASE OUTAGE	Loss of a phase on a polyphase system.	Fuse failure. Ground faults. Equipment failure. Accidents. Utility equipment failure. Lightning. Acts of nature.	System crashes. Hardware damage.
OUTAGE	A zero-volt condition lasting longer than a half-cycle.*	Ground faults. Equipment failure. Accidents. Utility equipment failure. Lightning. Acts of nature.	System crashes. Hardware damage.

*This is the definition of "outage" as seen by most computers. Utility companies usually define outage as a zero-volt condition lasting longer than five minutes.

Courtesy of Liebert Corporation

to dispute the manufacturer's contention.

Although I have not seen any specific test data, manufacturers of transient suppression equipment claim that spikes or impulses (short-duration high voltages) can have a long-term, detrimental effect on electronic equipment. These detrimental effects include:

- melting, or hot spots, in semiconductor devices, thereby destroying the circuitry;
- thermal runaway of transistors, destroying function;
- corrosion of contacts;
- insulation breakdown causing arcing of components and subsequent failure;
- deletion of data stored in computer memory or it may cause other electronic devices to interpret smaller voltage spikes as legitimate input signals, which in turn will output invalid information.

Finding the extent of disturbances

Determining the extent of these disturbances is not easy. Equipment that has the speed and capability to simultaneously read and record all of the possible causes of power-line disturbances is very expensive to either own or rent. In fact, you likely would need several pieces of equipment to measure all the parameters. To be sure you got the whole picture, this equipment would have to be left in place for at least one year.

Unless the winery's power system is experiencing some very repetitive and costly failures, extensive power line disturbance monitoring and recording is difficult to justify. I usually recommend the purchase of a high-quality, battery-backup, UPS system for each computer station and for your mainframe or central processor.

Even if the UPS system does not solve the problem, you potentially can eliminate power as the possible source of the problem, and investigate other causes. The UPS system still will be a good investment, since power disturbances come and go, and outages and brownouts will always be a fact of life. ■

References

1. Onan Corporation, Minneapolis, MN, "Onan Tech Newsletter 10."

2. Liebert Corporation, Columbus, OH, "Technology Cards SL-20520 & 20540."

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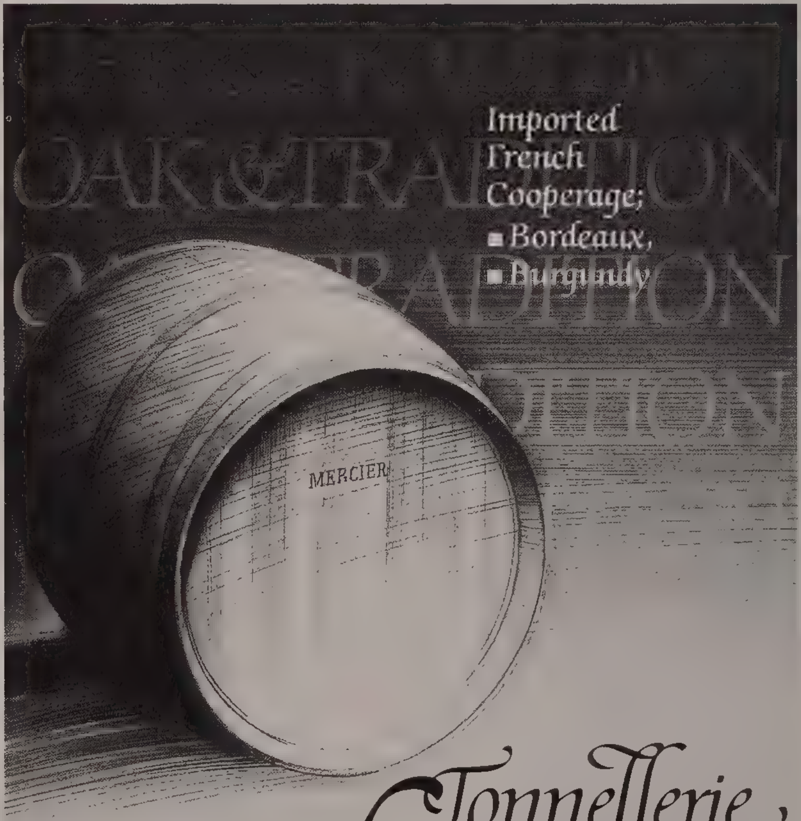

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Fetzer Vineyards receives PG&E energy efficiency award

Looking over design plans in the Hopland Winery tank room are, left to right, Patrick Healy, Fetzer Environmental Services; Tony Matthews, Fetzer Maintenance Operations Director; Paul Johnson, Account Representative with Pacific Gas & Electric, and Mechanical Engineering consultant, Scott Bennett.

Pacific Gas & Electric gave an Energy Efficiency Award to Fetzer Vineyards in Hopland, CA, for leadership in energy efficiency.

One energy-saving project was construction of an innovative insulated wall dividing a white wine tank room and a red wine tank room.

All of the tanks in the 24,000 sq.ft building are uninsulated and the exterior walls are moderately insulated. When the white wine is held in storage, it is refrigerated anywhere from 30°F to 50°F from September through April. Red wine is stored in tanks at temperatures from 50°F to 60°F throughout the year and introduced an enormous amount of heat into the air surrounding the tanks.

Because the red and white tanks were enclosed in the same building, the air naturally mixed, creating a substantial load on the cooler white tanks.

A masonry wall, eight inches thick, on a foundation to eight feet in height, and two layers of 1½-inch thick celotex extended to the 30-foot high ceiling, was constructed before the 1991 harvest. Doors built of fibreglass and celotex were installed to allow winery workers to roll pumps and other equipment from one room to the other.

The energy savings resulted from the reduction in the cooling load on the white wine tanks. Average temperatures around the tanks was estimated by interpolating between average tank temperatures and average ambient temperatures outside the building.

The following calculations of estimated energy savings were made by Scott Bennett, mechanical engineer:

- first-year energy savings: 68,385 kilowatt hours
- estimated first-year savings: $6,839 ($0.10/kwh)
- estimated three-year savings: $22,637 (10% inflation)
- PG&E rebate: $4,103

Fetzer replaced 152 mercury vapor lights in the above tank room, and other buildings at their Redwood Valley winery with metal halide lights. PG&E issued a $17,000 rebate check for installation of the energy-efficient lights.

Tony Matthews, Fetzer Maintenance Director, is evaluating replacement of air-cooled condensers with evaporative condensers and a heat recovery system addition to the refrigeration system to capture heat which can create hot water for winery use.

Matthews sums up the ongoing energy savings programs with a simple explanation, "In these tight economic times, a dollar saved is a dollar of profit." ■

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Chemco Industries	533
Cipriani, Inc.	302

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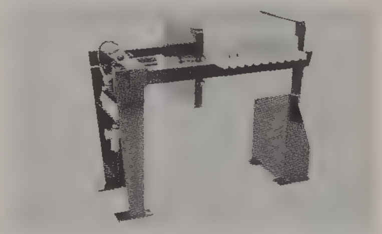
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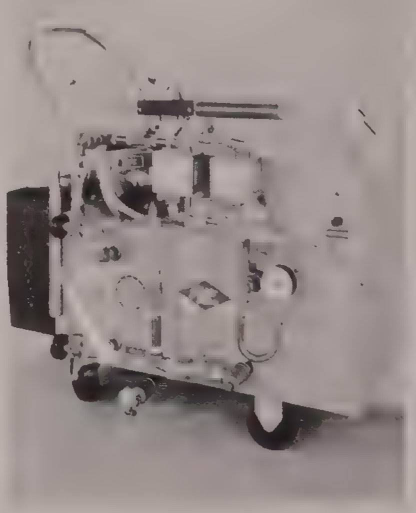

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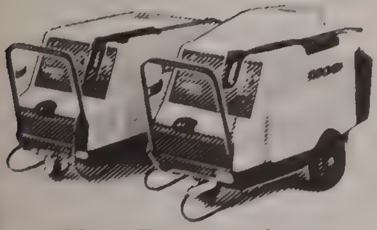

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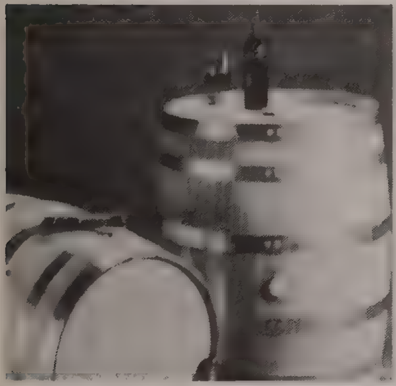

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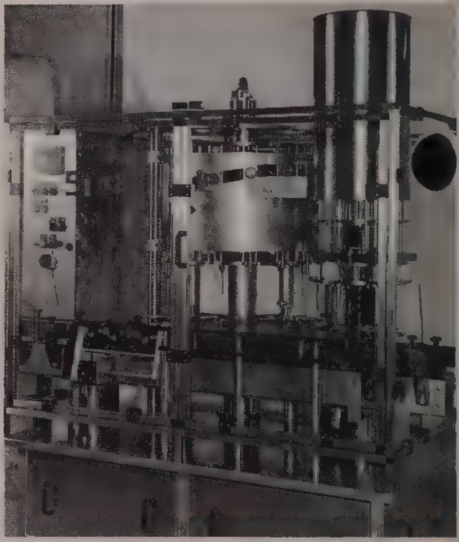
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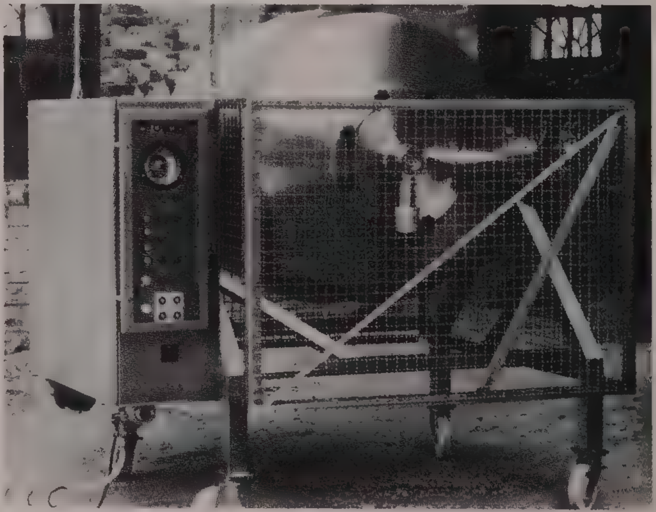
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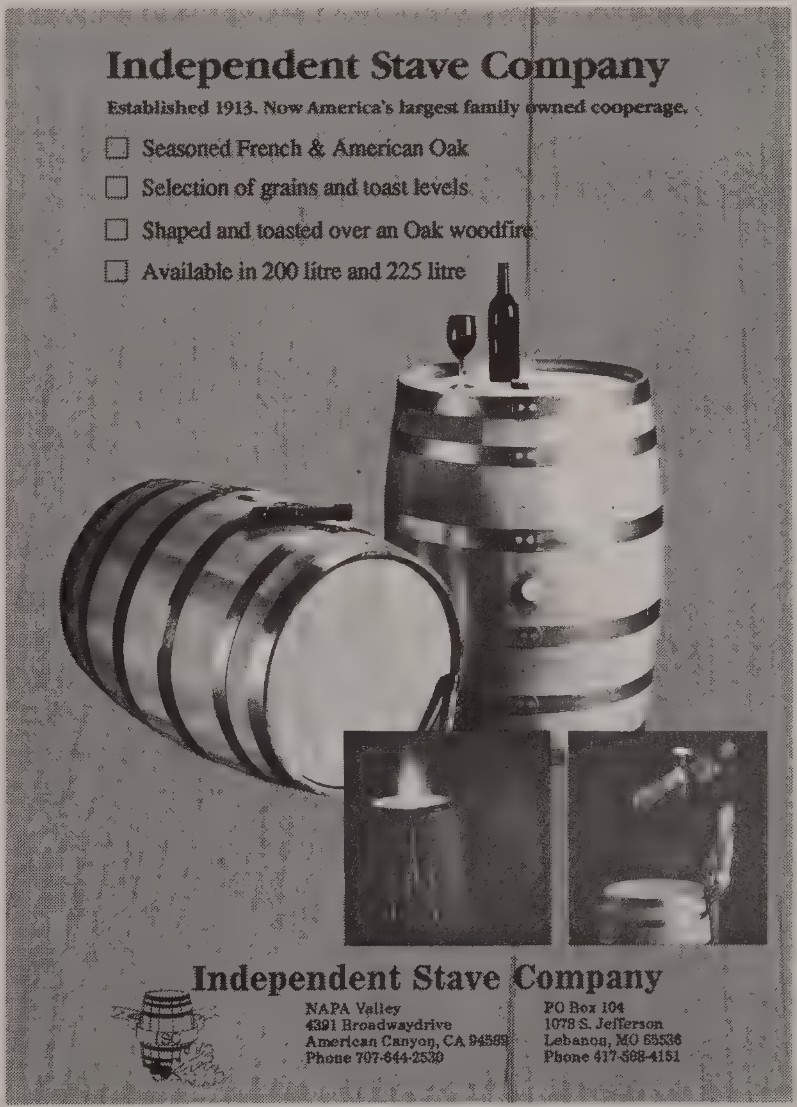
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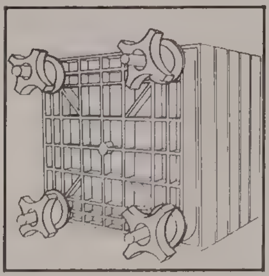

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Eastern Wine Publications

Do you have 'credibility'?

By Jay Conrad Levinson

Prospects aren't going to buy what you sell if you don't have credibility. **Confidence** has been proven the single most important reason that prospects become customers.

In order to earn that confidence — no easy task — you've got to use specific guerrilla marketing weapons, and use them properly. All of your marketing materials, whatever happens to be their message, also carry a 'metamessage' — an unstated, yet powerful communication. It's the way your marketing looks and 'feels.' It's where it appears. A full-age ad in a prestigious magazine carries a powerful metamessage.

The metamessage of a poorly written direct mail letter on unprofessional stationery is going to be quite different from a well-written letter on IBM's letterhead.

Before you even start operating your winery, you can begin the quest for credibility with weapons such as the name of your winery, logo, theme line, signs, label, back label, brochure, and even the attire worn by your sales representatives.

When amassing these weapons, keep in mind their metamessage. It must convey your honest identity and **all of the weapons should put forth the same metamessage.**

Once your winery is off and running, you will gain credibility with the guerrilla marketing weapons of quality (not generally recognized as a weapon, but without it, you're defenseless), service, regular customer follow-up, and your willingness to invest time, energy, and imagination into your marketing.

If you do, you'll activate a host of other guerrilla marketing weapons — all able to gain substantial credibility for your operation. Among these are wide distribution, testimonials by retailers, and a growing list of satisfied retailers who are requested to tell others about you. That will generate word-of-mouth, heavy artillery in the battle for credibility.

You take shortcuts to credibility by penning a column on wine for a publication, writing a book, conducting workshops, giving seminars, and making speeches about wine. These help establish your expertise, authority, and credibility.

Gain major-league credibility with a professional public relations (PR) effort, saying the right things to the right people at the right time. Once you do that, make reprints of it, frame it, make it part of your brochure, and mail copies to customers and prospects. To succeed at PR, you're going to need solid news and close publicity contacts with the media. If you don't have them, you can buy them.

The enormous credibility that comes with publicity stories or appearances is not inexpensive. But if you want credibility in a hurry, PR can obtain it for you.

Naturally, trade show displays can enhance your credibility. So can any free demonstrations, free consultations, or free samples you can offer.

A guerrilla shortcut to credibility is a full-page ad in a regional edition of a respected national magazine. The ad won't net you much credibility, but the reprints you display, mail, incorporate into other marketing, and proudly disseminate **will**. Count on it. And go for credibility if you've got a love affair with success. ■

(Jay Conrad Levinson is the author of the international best-seller, "Guerrilla Marketing," other business books, and publishes "The Guerrilla Marketing Newsletter." For a free brochure on these and other products and services, call toll-free 800/748-6444. In California, call 415/381-8361.)

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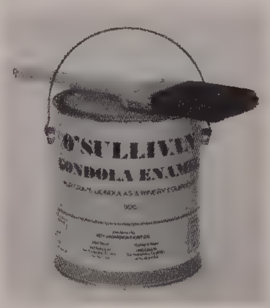

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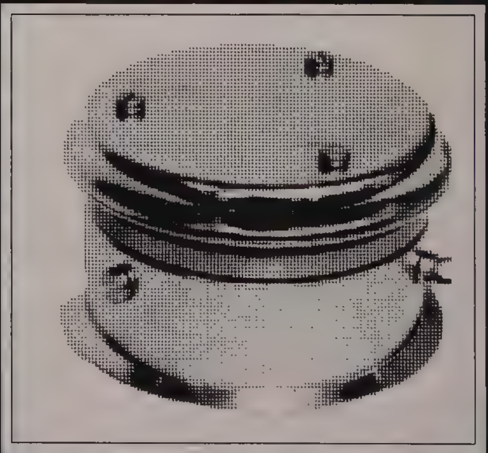

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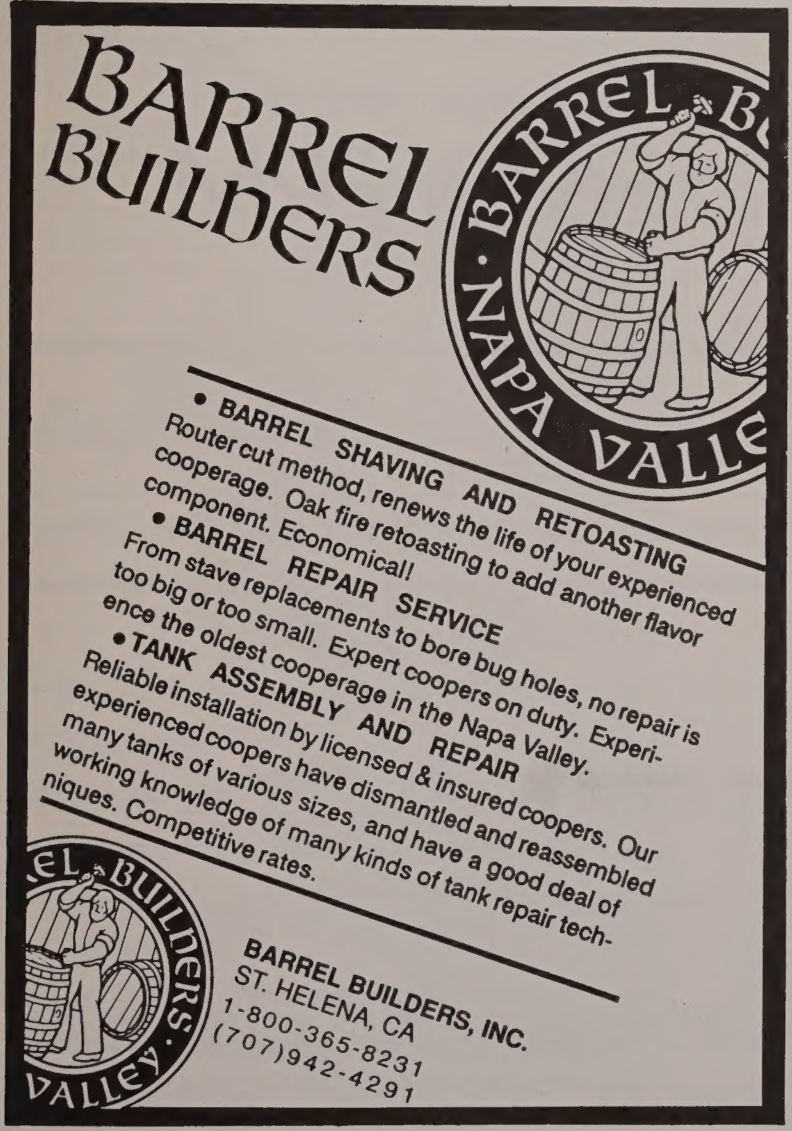
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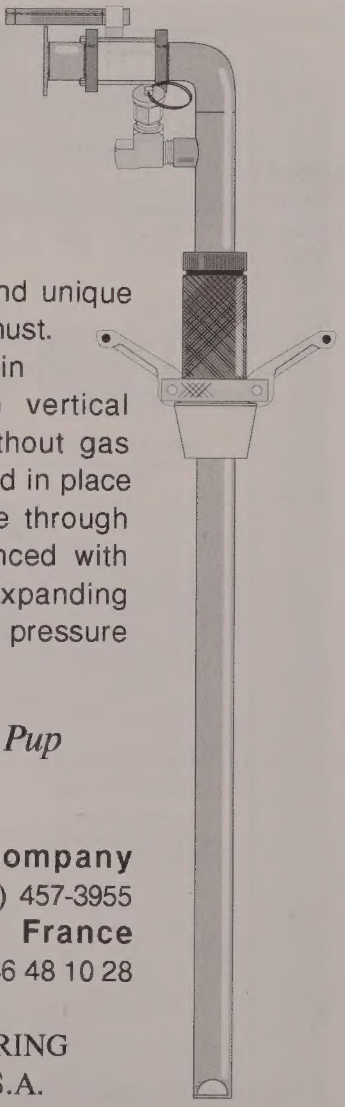

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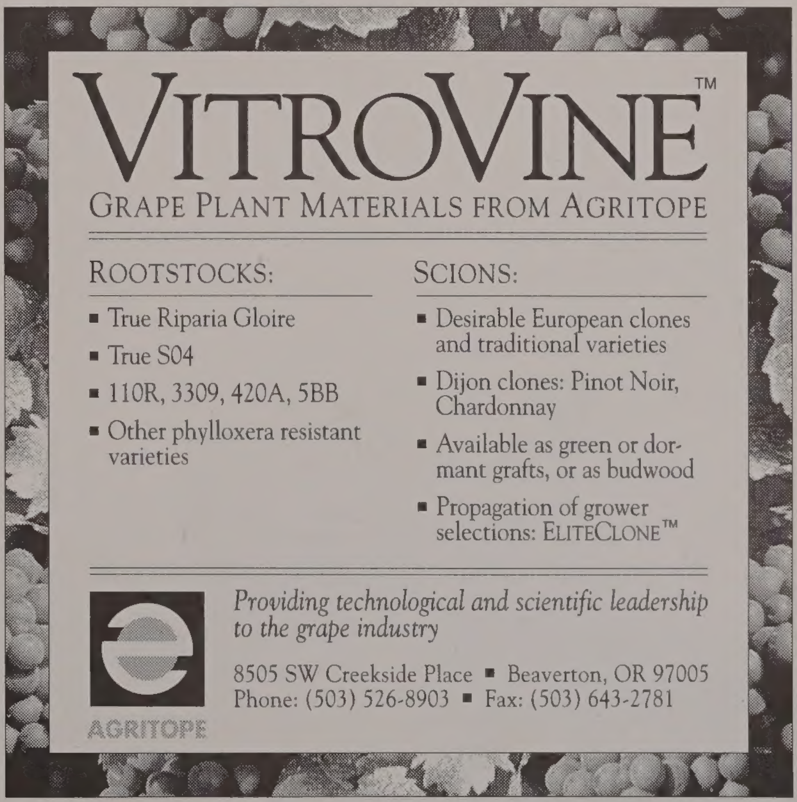

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